



Brain Injury Matrix

The brain injury matrix is provided as a general guideline for educators and professionals. It was developed as a beginning “reference point” for professionals working with students where a brain injury is suspected or known to be present. The matrix offers a wide range of suggested assessment tools and intervention

strategies for students with brain injury. It includes the domain areas of processing/learning most commonly affected by a brain injury. It does not cover all areas affected by a brain injury, nor is an exhaustive list. For more resources, please refer to the additional resources at the end of this document. For more information and guidance, please visit www.cokidswithbraininjury.com.

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
Attention	<ul style="list-style-type: none"> • Difficulty with turn taking • Doesn't turn in assignments • Fidgets/squirms in seat or doesn't stay in seat • Interrupts conversation • Is easily distracted • Loses things • Low frustration tolerance • Off topic • Spacey and forgetful • Talks excessively 	<ul style="list-style-type: none"> • Careless mistakes on school work • Difficulty following directions • Does not follow through with directions/tasks • Doesn't complete assignments • Erratic memory • Fails to give close attention to school work • Has inconsistent performance in school 	<p>(These assessments are used to look at attention impacts secondary to TBI, not to diagnose ADHD/ADD)</p> <ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Attention and Executive Functioning Subtests • Behavior Assessment System for Children, 2nd Ed. (BASC-2) • Behavior Observations during testing • Behavior Rating Inventory of Executive Function (BRIEF) • Behavioral Observations of Students in Schools (B.O.S.S.) • Brain Injury Observation Form in Chapter 4 • Classroom Observations On Task/Off Task Peer Analyses • Cognitive Assessment System, 2nd Ed. (CAS2), Attention Composite (Consider Planning Composite) • Comprehensive Executive Function Inventory (CEFI) • Conners, 3rd Ed. (Conners 3) • Conners Continuous Performance Test, 3rd Ed. (CPT3) • Delis Rating of Executive Function (D-REF) • Delis-Kaplan Executive Function System (D-KEFS) • Tasks of Executive Skills (TEC) 	<ul style="list-style-type: none"> • Brain Breaks • Ensure that you have the child's focus prior to giving instructions • Minds in Motion Fit Sticks • Redirect • Reduce visual and auditory distractions • Seat child closest to point of instruction and away from distractions • Vigorous movement to stimulate the brain, which will enhance focus 	<ul style="list-style-type: none"> • <i>Alert Program: How Does Your Engine Run</i> http://www.alertprogram.com • Behavior Intervention Plan • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #2 Attention • <i>Executive Function in Children and Adolescents</i> (Dawson/Guare) • <i>Executive Function in Education</i> (Meltzer) • Positive Behavior Support • <i>Project LEARNet</i> http://projectlearnet.org • <i>Smart but Scattered</i> (Dawson/Guare) • <i>Tools for Teaching</i> (Jones/Jones)

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
			<ul style="list-style-type: none"> • Vanderbilt Teacher Behavior Evaluation Scale (VTBES) • Woodcock Johnson, 4th Ed. (WJ-IV), Tests of Cognitive Abilities and Oral Language: COG 3 Verbal Attention, COG 10 Numbers Reversed, COG 18 Memory for Words, OL 5 Sentence Repetition 		
Inhibition	<ul style="list-style-type: none"> • Blurts thoughts out and can talk excessively • Calling out rather than waiting with hand raised • Can be physically on the go or driven by a motor; adult concern for physical safety • Fidgety/squirmy • Hard time staying in line, seat, classroom, etc. • Impulsive; “jumps before she looks” • Interrupts; socially intrusive • Jumps into an activity rather than waits for/reads instructions • Physical touch with others may be too much; disregard for boundaries • See Initiation under Executive Functions 	<ul style="list-style-type: none"> • Can be disruptive in the classroom • Difficulty following directions, not slowing down to process directions • May complete assignments incorrectly • May require a lot of redirection from teacher • Social difficulty 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II) • Behavior Assessment System for Children, 2nd Ed. (BASC-2) • Behavior Rating Inventory of Executive Function (BRIEF) • Brain Injury Observation Form in Chapter 4 • Cognitive Assessment System, 2nd Ed. (CAS2) • Delis-Kaplan Executive Function System (D-KEFS) • Observation in environment/FBA • Observation in testing (jump right in or thoughtful about responses/approach) • Stroop Color-Word Interference 	<ul style="list-style-type: none"> • Adults providing structure • Fading external support to internalization of routine and systems • Goal-directed problem solving process • Goal-Plan-Do-Review • Routine 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • LifeSkills Training • <i>Project Achieve – Stop & Think Program</i> (Knoff) • <i>Project Success</i> (Kastner)
Processing Speed	<ul style="list-style-type: none"> • Acts like he doesn’t understand • Appears inattentive • Delay in response • Fatigues easily • Frustration 	<ul style="list-style-type: none"> • Delay in response • Difficulty following lecture • Difficulty multi-tasking • Difficulty taking timed tests • Does not appear to remember information • Incomplete work • Poor grades in spite good effort 	<ul style="list-style-type: none"> • Brain Injury Observation Form in Chapter 4 • Differential Ability Scales, 2nd Ed. (DAS-II), Processing Speed • Task of Executive Control (TEC) • Wechsler Intelligence Scale for Children, 5th Ed. (WISC-V), Processing Speed • Woodcock Johnson, 4th Ed. (WJ-IV), Cognitive: COG 4 Letter-Pattern 	<ul style="list-style-type: none"> • Allow for delay in response • Be brief and concise • Copies of notes and outlines • Extra time • Give instructions one at a time • Repeat instructions • Short directions • Tape record lectures 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed section: #11 Mental Processing Speed • <i>CogMed</i> www.cogmed.com • <i>Project LEARNet</i>

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
		<ul style="list-style-type: none"> • Slow at doing work 	<ul style="list-style-type: none"> Matching, COG 11 Number-Pattern Matching, COG 17 Pair Matching 		<ul style="list-style-type: none"> http://projectlearnnet.org
Memory	<ul style="list-style-type: none"> • Appears manipulative • Appears to have attitude issues • Can't remember more than one thing at a time • Disorganized • Doesn't remember recent events • Forgets to turn in assignments • Gets lost frequently and easily • Learned helplessness • Looks spacey 	<ul style="list-style-type: none"> • Can't re-tell a story • Difficulty retaining new skills • Difficulty with multi-step directions/multi-step problem • Difficulty with spelling • Fails test in spite of studying • Forgets assignment • Forgets events • Forgets people and names • Inconsistent performance • Splintered learning • State dependent learning 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Memory and Learning • Brain Injury Observation Form in Chapter 4 • Child and Adolescent Memory Profile (ChAMP) • Children's Memory Scale (CMS) • Differential Ability Scales, 2nd Ed. (DAS-II), Memory Working Memory Subtests • Differential Ability Scales, 2nd Ed. (DAS-II), Recall of Designs • Differential Ability Scales, 2nd Ed. (DAS-II), Recall of Objects Delayed • Test of Memory and Learning, 2nd Ed. (TOMAL-2) • Test of Visual Processing Skills, 3rd Ed. (TVPS3), subtests: Visual Memory & Visual Sequential Memory • Wide Range Assessment Memory and Learning, 2nd Ed. (WRAML2) • Woodcock Johnson, 4th Ed. (WJ-IV), Cognitive and Oral Language: COG3 Verbal Attention, COG 10 Numbers Reversed, COG 16 Object Number Sequencing, COG 18 Memory for Words, OL 5 Sentence Repetition • Woodcock Johnson, 5th Ed. (WISC-V), Working Memory 	<ul style="list-style-type: none"> • Experiential Learning • Have student paraphrase directions or steps • Mnemonic strategies • New concepts - engage background knowledge • Pictures or visual cues • Practice daily routine • "Priming the pump" - slightly elevate emotions when teaching new concepts • Repeat instructions out-loud • Use memory aids e.g. visual cues, planners, PDAs or other compensatory strategies • Use of competitive games 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #9 Memory • <i>Project LEARNet</i> http://projectlearnnet.org
Sensory and Motor (Over-stimulation)	<ul style="list-style-type: none"> • Always touching people or things • Appears overwhelmed • Behavior may appear oppositional however, it may be adaptive; e.g. wearing hat to cover 	<ul style="list-style-type: none"> • Difficulty completing worksheets with too many items on them • Difficulty shifting from workbook/text book to writing on answer sheet/paper 	<ul style="list-style-type: none"> • Behavioral Classroom Observations • Brain Injury Observation Form in Chapter 4 • Effective informal vision – ocular motor control • Functional Behavioral Assessments • Functional vision 	<ul style="list-style-type: none"> • Allow student to dictate first draft of written assignment rather than write • Allow student to use a computer for written work • Ball cap or sunglasses for light sensitivity 	<ul style="list-style-type: none"> • <i>Alert Program: How Does Your Engine Run</i> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
	<ul style="list-style-type: none"> • eyes, laying on the floor • Bumps into others when in line • Clothes are disheveled due to tugging and sucking on clothes • Emotionally melt down • Fidgety • Irritable, short fuse • Overly excited in stimulating environments such as the playground, PE, lunchroom, etc. • Seeks oral stimulation • Seeks physical feedback, e.g. leans on desk • Tunes out due to over stimulation 	<ul style="list-style-type: none"> • Difficulty transitioning • Difficulty with group work and group discussion • Difficulty with reading due to visual stimuli • Difficulty with seat work • Excessive erasing, crossing out of words • Gets overwhelmed in crowded environments • Incomplete work • Messy papers, school work is not well-organized • Poor handwriting 	<ul style="list-style-type: none"> • OT Consult • PT Consult • Sensory Processing Measure • Sensory Profile • Vision and hearing screening: conversion/tracking/depth perception 	<ul style="list-style-type: none"> • Break down written work into chunks • Conduct assistive technology evaluation • Deep joint pressure • Preferential and thoughtful seating to reduce auditory and visual stimulation • Preferential seating to decrease sensory input • Reduce number of problems on a page • Reduce visual and auditory distractions • Situation intensity: turn stimulation down/off • Situation modification: earplugs, sunglasses, visors, moving to a new location • Situation selection: tune into preferential sound, mindfulness, goal orientation, diaphragmatic breathing • Use color overlays • Use line ruler to assist with visual tracking • Use study carrel • Weighted vests/ items (blankets, animals) • Wiggle Seat/inflatable chair cushion/ dynamic seating systems 	<p>Blue tabbed section: #19 Sensory processing</p> <ul style="list-style-type: none"> • <i>Project LEARNet</i> http://projectlearnet.org • <i>Zones of Regulation</i> www.zonesofregulation.com
<p><u>Sensory and Motor (Under-stimulation)</u></p>	<ul style="list-style-type: none"> • Motor – can appear clumsy and run into objects/people • Motor – constantly on the move • Tactile – seeks out touch or being held • Takes a lot of sensation to stimulate the child – so they seek out more 	<ul style="list-style-type: none"> • Difficulty following verbal directions • Tactile – difficulty registering pain or pressure 	<ul style="list-style-type: none"> • Brain Injury Observation Form in Chapter 4 	<ul style="list-style-type: none"> • Allow them to chew gum, hard candy, or crunchy foods • Fidget items • Heavy work or deep pressure activities • Running or jumping • Stretch bands on chairs • Therapy seats/exercise balls for sitting • Therapy swings or swinging 	<ul style="list-style-type: none"> • <i>Alert Program: How does Your Engine Run?</i> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE)

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
	<ul style="list-style-type: none"> stimulation Taste – picky eaters 			<ul style="list-style-type: none"> Trampoline Wall push-ups 	
Motor-Fine	<ul style="list-style-type: none"> Difficulty with fasteners Shaky hands/tremors 	<ul style="list-style-type: none"> Avoids tasks involving writing Difficulty with cutting Difficulty with drawing Poor handwriting Takes long time to produce written work 	<ul style="list-style-type: none"> A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Sensorimotor Beery-Buktenica Developmental Test of Visual Motor Integration, Sixth Ed. (BEERY VMI) Brain Injury Observation Form in Chapter 4 Bruininks-Oseretsky Test of Motor Proficiency, 2nd Ed. (BOT-2) Differential Ability Scales, 2nd Ed. (DAS-II), Recall of Designs Evaluation of Children’s Handwriting Skills – Grades 1-6 (ETCH) OT Consult Peabody Developmental Motor Skills, 2nd Ed. (PDMS-2) PT Consult Test of Visual Motor Skills (TVMS) 	<ul style="list-style-type: none"> Adapted scissors Allow student to use computer for written work Develop pre-prepared materials so that they do not have to focus on cutting etc. but can focus on content Guiding notes/outline Pencil grips Provide notes for student via another student or teacher Slant boards Speech to text technology Typing/texting vs. writing 	<ul style="list-style-type: none"> <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #5 Fine motor control, #12 New Learning – Written Language, #16 Praxis <i>Project LEARNet</i> http://projectlearnnet.org Assistive/Adaptive Technology
Motor-Gross	<ul style="list-style-type: none"> Avoids sports Bumps into things Can’t carry lunch tray Clumsy Falls Stumbling Unsteady on stairs, playground equipment or in crowds 	<ul style="list-style-type: none"> Avoids recess Difficulty with or avoidance of P.E. Difficulty with slumping in seat 	<ul style="list-style-type: none"> Brain Injury Observation Form in Chapter 4 Bruininks-Oseretsky test of Motor Proficiency, 2nd Ed. (BOT-2) OT Consult Peabody Developmental Motor Skills, 2nd Ed. (PDMS-2), for birth to 2 yr PT Consult 	<ul style="list-style-type: none"> Adapted PE Adapted seating (chairs, desks) 	<ul style="list-style-type: none"> Adaptive Sports and Physical Education <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #6 Gross motor Control, #16 Praxis
New Learning	<ul style="list-style-type: none"> Angry outburst or meltdowns Can be misclassified as lazy Can seem defiant Copies others’ behavior or work Follower Forgetful Frustration 	<ul style="list-style-type: none"> Cannot generalize or over generalizes information Does not remember information they have been taught Fails to see big picture; the gestalt Forgets people and names Inconsistent performance day to day 	<ul style="list-style-type: none"> A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Memory and Learning- Immediate Trials Brain Injury Observation Form in Chapter 4 Clinical Evaluation of Language Fundamentals, 4th Ed. (CELF-4), Paragraph Recall Subtest Differential Ability Scales, 2nd Ed. 	<ul style="list-style-type: none"> “Chunking”, allow child to master concept prior to introducing additional learning Errorless learning Experiential Learning; use of competitive games Forward/backward chaining, Gradual Release of Responsibility Model: – I do 	<ul style="list-style-type: none"> <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #12 New Learning <i>Project LEARNet</i> http://projectlearnnet.org <i>Teachers Encyclopedia of</i>

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
	<ul style="list-style-type: none"> • Makes things up to save face • May not exert effort when new material is presented • Spacey 	<ul style="list-style-type: none"> • May be able to memorize but cannot apply information • Poor result in spite of extensive effort • Splintered learning 	(DAS-II), Recall of Objects-Immediate Trials <ul style="list-style-type: none"> • Scales of Cognitive Ability for Traumatic Brain Injury (SCATBI) for Adolescents • Test of Memory and Learning, 2nd Ed., (TOMAL-2), New Learning Index • Wechsler Memory Scales, 3rd Ed. (WMS-III), and Children’s Memory Scales Immediate Trials • Wide Range Assessment Memory and Learning, 2nd Ed. (WRAML2) • Woodcock Johnson, 4th Ed. (WJ-IV), Cognitive: COG 6 Story Recall, COG 13 Visual Auditory Learning 	it-You watch me, I do it-You help me, We do it together-I help you, You do it-I watch you <ul style="list-style-type: none"> • Have child repeat back instruction to demonstrate understanding • Label items in classroom • Multi-modal learning • Preview new material • Repeat instructions • Review daily learning • Spiraling • Strategy to slightly elevate emotions when teaching new concepts • Teach new material in context and draw on background knowledge • Teach to learning style strength and reinforce with different types of learning methods • Thematic learning • Use real world examples in teaching to make new learning meaningful • Visualization 	<i>Behavior Management (100 Problems 500 Solutions)</i> (Sprick/Howard)
<u>Language – Receptive</u>	<ul style="list-style-type: none"> • Acts out • Confused • Difficulty understanding complex ideas or directions • Difficulty with auditory information • Does not understand multiple meaning-words, inferential, figurative and more complicated abstract language • Echolalia • Follower 	<ul style="list-style-type: none"> • Answers wrong question • Circumlocution • Delayed reading • Difficulty following instructions • Difficulty problem solving • Difficulty understanding homework assignments • Difficulty with math word problems • Poor reading comprehension • Reading or writing weakness 	<ul style="list-style-type: none"> • Brain Injury Observation Form in Chapter 4 • Clinical Evaluation of Language Fundamentals (CELF), Preschool • Clinical Evaluation of Language Fundamentals, 4th Ed. (CELF-4) and 5th Ed. (CELF-5), Receptive Language Index • Comprehensive Assessment of Spoken Language (CASL) • Listening Test • Metalinguistic Subtest • Oral and Written Language Scales, 2nd Ed. (OWLS-II) 	<ul style="list-style-type: none"> • Allow extra “think” time • Break complex directions into concrete examples • Give directions slowly and one at a time • Have child repeat back instructions • Provide directions, assignments, lectures in writing • Reduce semantic load to minimize frustration and confusion • Reinforce with visual cues 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #4 Expressive Language, #17 Receptive Language, #12 New Learning - Reading, Written Language

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
	<ul style="list-style-type: none"> • Inability to follow multi-step directions • Inattentive, distractible • Says "huh" frequently • Slow or does not respond to directions • Social withdrawal 	<ul style="list-style-type: none"> • Slow to understand • Writing output is weak 	<ul style="list-style-type: none"> • Peabody Picture Vocabulary Test, 4th Ed. (PPVT-4) • Preschool Language Scales, 5th Ed. (PLS-5) • Test of Language Competence • Test of Problem Solving – 2 Adolescent (TOPS-2) • Test of Problem Solving – 3 Elementary (TOPS-3) • Wechsler Intelligence Scale for Children, 5th Ed. (WISC-V), Verbal Comprehension • Woodcock Johnson, 3rd Ed. (WJ-III), Auditory Processing 	<ul style="list-style-type: none"> • Teach the use of graphic organizers to visually represent concepts 	
<u>Language - Expressive</u>	<ul style="list-style-type: none"> • Act out • Breakdown in logical sequencing of ideas • Circumlocution • Difficult to follow in conversations • Difficulty Interpreting sarcasm • Difficulty responding to facial expressions and body language • Dysarthric speech (slow, slurred speech, mumbling) • Follower • Frequently repeat the same question or make the same comment • Frustration • Ruminating on topics • Social withdrawal • Uses immature or inappropriate speech • Uses poor grammar or immature speech • Word retrieval difficulty using words and 	<ul style="list-style-type: none"> • Difficulty identifying or providing salient details • Difficulty summarizing • Difficulty with problem-solving • Lack of specific language in academic work • Often repeats the same idea rather than providing more or different information about a topic • Responses may be short without much elaboration on topic • Trouble participating in class discussions • Trouble writing essay questions or re-telling stories 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Language Assessments in LANGUAGE-RECEPTIVE Section apply • Brain Injury Observation Form in Chapter 4 • Clinical Evaluation of Language Fundamentals, 4th Ed. (CELF-4) and 5th Ed. (CELF-5), Expressive Language Index • Clinical Evaluation of Language Fundamentals, Preschool, 2nd Ed. (CELF: P-2) • Comprehensive Assessment of Spoken Language (CASL) • Differential Ability Scales, 2nd Ed. (DAS-II), Verbal • Expressive One-Word Picture Vocabulary Test • Functional Communication Measures (FCM) • Oral and Written Language Scales, 2nd Ed. (OWLS-II) • Preschool Language Scales, 5th Ed. (PLS-5) • Wechsler Individual Achievement 	<ul style="list-style-type: none"> • Allow child to dictate thoughts prior to writing • Ask open ended questions • Provide choices • Teach attributes of concepts • Teach summarization skills • Teach the child appropriate expressions, role play 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #4 Expressive Language, #12 New Learning - Reading, Written Language, #21 Word Retrieval

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
	sentences to express ideas		Test, 3 rd Ed. (WIAT-3), Oral Expression • Woodcock Johnson, 3 rd Ed. (WJ-III), Verbal Comprehension		
Language – Social Pragmatic *Some of the pragmatic information is in the manual but additions have been made. None of the pragmatic language information is currently on the website	<ul style="list-style-type: none"> • Difficulty building or maintaining friendships • Difficulty negotiating social rules • Difficulty staying on topic • Difficulty taking turns • Difficulty understanding humor, jokes or sarcasm • Difficulty with proprioception (knowing body in space) • Frustration • Inappropriate use of jokes, sarcasm or humor • Understanding fast paced conversations • Use of appropriate tone of voice 	<ul style="list-style-type: none"> • Difficulty making and maintaining friendships • Difficulty working in groups in the classroom • Doesn't seem to fit into social groups in less structured settings such as recess, lunch, etc. 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Social Perception • Brain Injury Observation Form in Chapter 4 • Clinical Evaluation of Language Fundamentals, 4th and 5th Ed., (CELF-4, CELF-5), Pragmatics Profile • Clinical Evaluation of Language Fundamentals, 5th Ed. (CELF-5), Metalinguistics • Clinical Evaluation of Language Fundamentals, 5th Ed. (CELF-5), Pragmatic Activities Checklist • Conversational Effectiveness Profile – Revised (CEP-R); http://www.socialpragmatics.com/cep-r.html • Social Language Development Test, Elementary or Adolescent • Test of Problem Solving-2 Adolescent (TOPS-2) • Test of Problem Solving–3 Elementary (TOPS-3) 	<ul style="list-style-type: none"> • Develop friendship groups • Get student involved with counselor • Work with classroom teacher to place student in work groups 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>Social Language Development Scenes (Elementary/ Adolescent)</i> (Linguisticsystems) • <i>Social Thinking Worksheets for Tweens and Teens</i> (Winner) • <i>Superflex a Superhero Social Thinking Curriculum</i> (Winner) • (Also see Interventions in Social/Emotional Competency Section)
Visual-Spatial	<ul style="list-style-type: none"> • Can experience behavior Difficulty due to frustration of not understanding visual materials and expectations • Complains that “it all blends together” • Difficulty organizing materials • Difficulty with proprioception (knowing body in space) • Gets lost 	<ul style="list-style-type: none"> • Depth perception Difficulty • Difficulty organizing written work • Difficulty using charts, maps and graphs • Difficulty with Mathematics/Geometry • Distance perception Difficulty • Handwriting Difficulty • Mental rotation • Object construction • Reading Difficulty 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Visualspatial Processing • Beery-Buktenica Developmental Test of Visual Motor Integration, 6th Ed. (BEERY VMI) • Brain Injury Observation Form in Chapter 4 • Differential Ability Scales, 2nd Ed. (DAS-II), Spatial Subtests • Kauffman Assessment Battery for Children (KABC-II), NonVerbal Scale • Leiter International Performance 	<ul style="list-style-type: none"> • Consider if visual presentation of worksheets needs to be modified • Enlarging written materials • Provide directions verbally-frequent check for understanding • Provide support in aligning math problems (graph paper) • Provide support in organizing writing from left to right and organizing/expressing thoughts • Reduce visual “clutter” at 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>See It, Say It, Do It</i> (Hellerstein) • <i>Visual Spatial Portals to Thinking, Feeling and Movement</i> (Wieder/Wachs)

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
	<ul style="list-style-type: none"> • Increased headaches during visual tasks • Sensitivity to light 	<ul style="list-style-type: none"> • Spatial perception and orientation Difficulty • Visualizing mental maps 	<ul style="list-style-type: none"> • Scale, 3rd Ed. (Leiter-3) • Test of Visual Perceptual Skills, 3rd Ed. (TVPS-3) • Wechsler Intelligence Scale for Children, 5th Ed. (WISC-V), Perceptual Reasoning Subtests • Woodcock Johnson, 4th Ed. (WJ-IV), Cognitive: COG 7 Visualization, COG 14 Picture Recognition 	<ul style="list-style-type: none"> • student's desk • Use a ruler to track reading • Verbal focus on learning • Visual planners (webs, diagrams) may be too confusing 	
<u>Executive Function: Initiation</u>	<ul style="list-style-type: none"> • Appears aloof or disinterested to peers • Can state what they are supposed to do but does not get started • Difficulty starting tasks • Does not independently start tasks • Does not make plans academically or socially • Follower • Lagging in independent living skills • May appear lazy or spacey • Often gets overlooked because they are not trouble in the classroom • Requires constant cueing • Seeks out adults for social interaction • Slow to shift at same time as peers • Unmotivated 	<ul style="list-style-type: none"> • Appears passive/resistant • Difficulty knowing how to get started • Difficulty managing long-range projects • Does not complete homework or seatwork • Turns in poor quality work • Woefully incomplete work 	<ul style="list-style-type: none"> • Assessment Observations • Behavior Rating Inventory of Executive Function (BRIEF) • Brain Injury Observation Form in Chapter 4 • Classroom Observations • Comprehensive Executive Function Inventory (CEFI) • Delis Rating of Executive Function (D-REF) 	<ul style="list-style-type: none"> • Provide a written routine to assist/help student begin work • Provide assistance with getting started with school work • Provide more frequent check-ins to ensure student is completing work • Teach students how to observe others to identify what to do next • Use of contingency based interventions centering on video games • Use Visual imagery to practice the activity steps prior to initiation 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed section: #7 Initiation • <i>Executive Skills in Children and Adolescents</i> (Dawson/Guare) • <i>Project LEARNet</i> http://projectlearnet.org • <i>Smart but Scattered</i> (Dawson/Guare) • <i>Tools for Teaching</i> (Jones/Jones)
<u>Executive Function: Planning</u>	<ul style="list-style-type: none"> • Difficulty with problem solving • Doesn't make plans with friends • Rigidity of thinking 	<ul style="list-style-type: none"> • Difficulty with long term assignments • Difficulty with sequential tasks • Difficulty with time management • Difficulty writing papers • Doesn't brainstorm 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Attention and Executive Function • Assessment Observations • Behavior Rating Inventory of Executive Function (BRIEF) • Brain Injury Observation Form in 	<ul style="list-style-type: none"> • Antecedent Management • Anticipate transitions • Block & Box (Sara Ward) • Future Thinking • Get Ready, Do, Done • Provide student with "Planning Sheet" (see <i>Executive Skills in Children</i>) 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed section: #15 Planning • Check In/Check Out

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
		<ul style="list-style-type: none"> • Often late for class • Often unprepared for class 	<p>Chapter 4</p> <ul style="list-style-type: none"> • Cognitive Assessment System, 2nd Ed. (CAS2), Planning Composite • Comprehensive Executive Function Inventory (CEFI) • Delis Rating of Executive Function (D-REF) • Delis-Kaplan Executive Function System (D-KEFS) • Parent/teacher interviews • Trails Making (A&B) • Woodcock Johnson 4th Ed. (WJ-IV), Cog- Planning Subtest 	<p>and Adolescent resource book)</p> <ul style="list-style-type: none"> • Report and Talk Aloud • Software programs – e.g., “Kidspiration” and “Inspiration” have graphic organizers and can export to a word doc in outline format • The Working Clock – Time Management Strategy (Sarah Ward) • Use a smart phone and set reminders and alarms 	<ul style="list-style-type: none"> • <i>Executive Function in Education</i> (Meltzer) • <i>Executive Skills in Children and Adolescents</i> (Dawson/Guare) • <i>Project LEARNet</i> http://projectlearnnet.org • <i>Smart but Scattered</i> (Dawson/Guare)
<p>Executive Function: Mental Flexibility</p>	<ul style="list-style-type: none"> • Argumentative • Concrete • Difficulty making friends • Difficulty taking feedback • Difficulty with transitions • Doesn't like to try new things • Lacks empathy • Perseveration • Rigid thinkers • Stubborn 	<ul style="list-style-type: none"> • Difficulty coming up with solutions • Difficulty deviating from schedule • Difficulty shifting between tasks or ideas • Difficulty with Abstract thinking • Doesn't do what asked • Doesn't learn from mistakes • Doesn't think well on his/her feet 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment, 2nd Ed. (NEPSY-II), Attention and Executive Function • Assessment Observations • Behavior Rating Inventory of Executive Function (BRIEF) • Brain Injury Observation Form in Chapter 4 • Delis-Kaplan Executive Function System (D-KEFS) • Parent/teacher interview • Woodcock Johnson, 4th Ed. (WJ-IV), Cognitive: COG 3 Verbal Attention, COG 4 Letter-Pattern Matching, COG 10, Numbers Reversed, COG 11 Number-Pattern Matching 	<ul style="list-style-type: none"> • Block & Box (Sarah Ward) • Develop routines • Explicitly teach flexible thinking skills (i.e., warnings, counting down time, timers, practice changing schedule) • Guided Self-Reflection • Plan for situations that require mental flexibility • Teach coping strategies 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed section: #10 Mental Flexibility • <i>Collaborative Problem Solving</i> (Greene) • <i>Executive Function in Education</i> (Meltzer) • <i>Executive Skills in Children and Adolescents</i> (Dawson/Guare) • <i>Explosive Child</i> (Greene) • <i>Five is Against the Law</i> (Buron) • <i>Project LEARNet</i> http://projectlearnnet.org • <i>Smart but Scattered</i> (Dawson/Guare) • <i>Superflex</i> (Winner) • <i>Zones of Regulation</i> www.zonesofregulation.com

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
<p><u>Executive Function: Reasoning</u></p>	<ul style="list-style-type: none"> • Acts without thinking of the consequences • Does not follow through with request to complete tasks • Doesn't think well on his/her feet • Followers • Lacks common sense • Makes poor behavioral and social choices • May appear depressed • Oppositional • Poor social judgment e.g. promiscuity, school suspension • Stubborn 	<ul style="list-style-type: none"> • Can do rote learning but does not get broader concepts • Concrete thinker • Difficulty responding to essay questions • Difficulty with comprehension, e.g. reading, math, written expression • Difficulty with math word problems • Does better on multiple choice tests • Does not generalize information appropriately (over or under generalizes) • Does not get big picture • Lacks insight 	<ul style="list-style-type: none"> • Brain Injury Observation Form in Chapter 4 • Cognitive Assessment System, 2nd Ed. (CAS2), Simultaneous Processing Composite • Differential Ability Scales, 2nd Ed. (DAS-II), Non-Verbal • Kauffman Assessment Battery for Children (KABC-II), NonVerbal Scale • Test of Adolescent Problem-Solving (TOPS) • Wechsler Intelligence Scale for Children, 5th Ed. (WISC-V), Perceptual Reasoning Subtests • Woodcock Johnson, 4th Ed. (WJ-IV), Cognitive: COG 2 Number Series, COG 9 Concept Formation, COG 15 Analysis-Synthesis 	<ul style="list-style-type: none"> • Asking "why" questions • Avoid sarcasm • Problem solving strategies • Scaffolding • Inquiry-based/Cooperative Learning • Teaching into meaningful concepts • Use multiple choice instead of essay test formats 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainWise</i> (Barry) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #8 Judgment, #12 New Learning, #13 Non-Verbal Learning, #20 Social Skills • <i>Bully Proofing</i> (Garrity/Bonds/ Camilli) • Circle of Friends • Cognitive Behavioral Therapy/Intervention • <i>Executive Function in Education</i> (Meltzer) • <i>Five is Against the Law</i> • <i>Helping the Child who Doesn't Fit In</i> (Nowicki/Duke) • Problem Solving Groups • <i>Project LEARNet</i> http://projectlearnet.org • Refusal Skills • <i>Skill Streaming</i> (McGinnis) • Social Skills Groups • Stranger Danger • <i>Why Try</i> www.whytry.org • <i>Zones of Regulation</i> (lesson 12) www.zonesofregulation.com
<p><u>Executive Function: Organizational Skills</u></p>	<ul style="list-style-type: none"> • Copies behaviors of others • Difficulty with transitions • Easily frustrated • Follower • Is disorganized • Loses things easily • Spacey 	<ul style="list-style-type: none"> • Difficulty with long range projects • Doesn't turn in homework • Homework is incomplete • Not independent learner • Often Forgetful • Work is messy 	<ul style="list-style-type: none"> • Behavior Rating Inventory of Executive Function (BRIEF) • Brain Injury Observation Form in Chapter 4 • Observations • Parent/teacher interview 	<ul style="list-style-type: none"> • Color code subjects • Provide student with step-by-step instructions • Report and Talk Aloud strategy • Smartphone apps: clock/timer, calendar with reminders, Evernote 	<ul style="list-style-type: none"> • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 3) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed section: # 14 Organization, #15 Planning

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
				<ul style="list-style-type: none"> recordings/pictures/detailed instruction; • Multiple small storage bins; label storage area contents – create routines for use • Support between home and school to implement an organization system • Teach/support organization skills/systems (folders, planners, etc.) • Use a “zipper” folder containing sections for each subject and sections for work “to do”, “completed” etc. 	<ul style="list-style-type: none"> • <i>Executive Function in Education</i> (Meltzer) • <i>Executive Skills in Children and Adolescents</i> (Dawson/Guare) • <i>Project LEARNet</i> http://projectlearnet.org • <i>Smart but Scattered</i> (Dawson/Guare) • <i>Tools for Teaching</i> (Jones/Jones)
<u>Social/Emotional Competency</u>	<ul style="list-style-type: none"> • Difficulty keeping and making friends • Difficulty reading social cues • Difficulty with anger management • Emotionally labile • Melt down • Over/under reaction 	<ul style="list-style-type: none"> • Cognitive distortions • Difficulty with group learning • Emotional pre-occupation that interferes with academics • Trouble focusing 	<ul style="list-style-type: none"> • A Developmental Neuropsychological Assessment (NEPSY-II), Social Perception • Adaptive Behavior Assessment System, 2nd Ed. (ABAS-II) • Behavior Assessment System for Children, 2nd Ed. (BASC-2) • Behavior Rating Inventory of Executive Function (BRIEF) • Behavioral Intervention Plan (BIP) • Brain Injury Observation Form in Chapter 4 • Children’s Depression Inventory • Classroom Observations • Conversational Effectiveness Profile – Revised (CEP-R): An assessment tool measuring Social Interaction, Social Communication, and Social-Emotional Regulation; www.socialpragmatics.com • Functional Behavioral Assessment (FBA) • Interviews • Revised Children Manifest Anxiety 	<ul style="list-style-type: none"> • Calm down area • Counting backwards • Deep breathing • Relaxation techniques • Visualization 	<ul style="list-style-type: none"> • Aggression Replacement Training • Behavior Intervention Plans • Behavior Management • <i>Brain Injury in Children and Youth: A Manual for Educators</i> (Chapter 4) (CDE) • <i>BrainSTARS</i> Chapter 3 and Blue tabbed sections: #1 Adolescent Self-Regulation, #3 Emotion Regulation, #18 Self-Regulation, #20 Social Skills • <i>BrainWise</i> • Cognitive Behavioral Therapy (CBT) • Collaborative Problem Solving • <i>Five is Against the Law</i> • Functional Behavioral Assessments

Neuro-Developmental Domain	Behavioral Impacts	Cognitive Academic Impacts	Assessment Suggestions:	Environmental Supports and Accommodations	Resources and Interventions
			<p>Scale, 2nd Ed. (RCMAS-2)</p> <ul style="list-style-type: none"> • Reynolds Adolescent Depression Scale, 2nd Ed. (RADS-2) • Scales of Independent Behavior-Revised (SIB-R) • School Functional Assessment (SFA) • Social Skills Rating System (SSRS) • Test of Pragmatic Language, 2nd Ed. (TOPL-2) • Vineland Adaptive Behavior Scales, 2nd Ed. (Vineland-II) • Emotional Disturbance Decision Tree; EDDT (Euler, 2007) • Scales for Assessing Emotional Disturbance, Second Edition; SAED-2 (Epstein, 2010) • Conners, 3rd Ed. (Conners 3) • Conners Continuous Performance Test, 3rd Ed. (CPT3) 		<ul style="list-style-type: none"> • <i>Incredible Years</i> (Webster-Stratton) • Journaling • <i>The Incredible 5 Point Scale</i> (Buron) • Mental Health, Social-Emotional, and Behavioral Screening and Evaluation Compendium; http://sst3pbisleadershipnetwork.weebly.com/uploads/2/7/3/2/27328863/mental_health • Positive Behavior Support • <i>Second Step</i> www.secondstep.org • <i>Skills Streaming</i> • <i>Smart but Scattered</i> (Dawson/Guare) • Social Narratives • <i>Superflex</i> • <i>Tools for Teaching</i> (Jones/Jones) • <i>Why Try</i> • www.intensiveintervention.org • <i>Zones of Regulation</i> www.zonesofregulation.com
			<p>For More Information on Social Emotional Competency: http://sst3pbisleadershipnetwork.weebly.com/uploads/2/7/3/2/27328863/mental_health_screening_and_evaluation_compendium.pdf</p>		

Additional Resources: (*indicates free)

Aggression Replacement Training. Goldstein, A, Glick, B. & Gibbs, J. Research Press

Assessment and treatment of TBI with school age children & adults. 1992. Ylvisaker, M. Buffalo NY: Educom Associates

**Brain Injury in Children and Youth: A Manual for Educators*. 2013. Colorado Department of Education. www.cde.state.co.us/cdesped/sd-tbi

Brain Injury Survival Kit, 365 Tips, Tools, & Tricks to Deal with Cognitive Function Loss. 2008. Sullivan, C.

*BrainLine Kids – a feature of BrainLine.org. www.Brainline.org

BrainSTARS: Brain Injury—Strategies for Teams and Re-education for Students. 2002. Dise-Lewis, J., Calvery, M. & Lewis, H.

Executive Function in Education: From Theory to Practice. 2007. Meltzer, L. NY: Guilford Press.

Executive Skills in Children and Adolescents. 2004. Dawson, P. & Guare, R. NY: Guilford Press.

Helping the Child who Doesn't Fit In. 1992. Nowicki, S. and Duke, MP. Peachtree Publishers

How does your engine run? Alert Program for Self-Regulation. 1996. Williams, MS. & Shellenberger, S. TherapyWorks, Inc.

*Interventioncentral.org - Interventions, suggestions, tools for social/emotional strategies. interventioncentral.org

*LEARNet, Ylvisaker, M, HibbardM & Feeney, T. www.projectlearn.net.org

Providing Alternative Thinking Strategies (PATHS), Kusche, C. and Greenberg, M., Channing Bete Company

SkillStreaming (books for Pre-K to 1 grades, 2 to 5 grades and 6-12 grades). 1997. Goldstein, A & McGinnis, E. Research Press Publishers

Smart but Scattered. 2009. Dawson P & Guare R. NY: Guilford Press

Superflex - ASuperhero Social Thinking Curriculum. 2008. Madrigal, S. & Garcia Winner, M. Think Social Publishing

Teachers Encyclopedia of Behavior Management 100 Problems/500 Plans. 2012. Sprick, R and Howard, L. Pacific Northwest Publishing

*Think:Kids – Rethinking Challenging Kids. Massachusetts General Hospital. <http://www.thinkkids.org/>

*The Center on Brain Injury Research & Training. Evidence-based strategies for students with Brain Injury. www.CBIRT.org.

The Incredible Years, Incredible Years Program, Seattle, Washington

Tools for Teaching. 2007. Jones F. CA: Frederic H Jones & Associates, Inc.

*What Works Clearinghouse. 2002. U.S. Department of Education, Institute for Education Sciences. www.whatworks.ed.gov.

Why Try – Building Resilience in the Workplace, at School and at Home. Moore, C.

Traumatic Brain Injury Networking Team Steering Committee (TNT)-Original Developers/Authors of the Brain Injury Matrix (2012): Nicole Crawford, Judy Dettmer, Jeanne Dise-Lewis, Priscilla Hurley, Megan Koepsell, Karen McAvoy, Kathy Patrick, Peter Thompson, Liz Wilburn.

Revised Brain Injury Matrix & Glossary Developers/Authors (2015): Nicole Crawford, Patricia Colella, Donna Detmar-Hannah, Judy Dettmer, Heather Hotchkiss, Corey Klein, Karen McAvoy, Peter Thompson, Kristy Werther.

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Brain Injury Matrix – Glossary

The brain injury matrix glossary is a supplement to the brain injury matrix. The brain injury matrix is provided as a general guideline for educators and professionals. It was developed as a beginning “reference point” for

professionals working with students where a brain injury is suspected or known to be present. The matrix glossary offers some definitions and additional information on some of the terms used in the matrix. The matrix does not cover all areas affected by a brain injury, nor is an exhaustive list. For more resources, please refer to the additional resources at the end of the brain injury matrix document. For more information and guidance, please visit

www.cokidswithbraininjury.com.

Domain	Term	Definition
Attention	Minds in Motion Fit Sticks	Quick and easy movement activities to help increase attention as well as classroom behavior. Can be used with individual students, small groups or large classrooms. http://wellness.aurorak12.org/staff/physical-activity/minds-in-motion-fit-sticks/
Inhibition	Goal Directed Problem Solving Process	<p>WHY IS PROBLEM SOLVING IMPORTANT FOR MANY STUDENTS AFTER TBI?</p> <p>For many people, the process of setting goals, planning, reviewing, and adjusting (solving problems) is often relatively automatic. For many students with disability, including disability associated with TBI, this process is not automatic. Problem solving may need to become more conscious and deliberate. In part, this is because there are more obstacles to overcome and problems to be solved if one has a disability. Furthermore, this process of setting and managing goals and solving problems in pursuit of goals may be a relatively specific deficit after the brain injury. Individuals with damage in the frontal regions of the brain, common after TBI, tend to have difficulty understanding their needs, setting realistic goals, making plans to achieve the goals, initiating relevant goal-directed behaviors, inhibiting distracting behaviors, monitoring their performance, evaluating outcomes in relation to goals, and making strategic adjustments – that is, solving problems – as a result of this monitoring process. Therefore, goal management and problem solving are often specific intervention targets in working with students with TBI. As a result of damage to the frontal lobes, many students with TBI are relatively unaware of their difficulties. Alternatively, they may resist that awareness because it is emotionally painful. In either case, the students will likely resist problem-solving strategies and systems until awareness and denial are effectively addressed. (See Tutorial on Self Monitoring and Self Evaluating.) <i>Source:</i> http://www.projectlearnnet.org/tutorials/problem_solving.html</p>
Inhibition	Goal-Plan-Do-Review	General Self-Regulation Script/Routine: Goal-Obstacle-Plan-Do-Review

Domain	Term	Definition
		<p>The information that follows is an outline of how people achieve success when tasks are difficult. One of the goals of education is to plant this template into the heads of all students. This becomes even more essential for students with TBI, because they more frequently face difficult tasks than students with no disability. Problem identification and problem solving arise at the level of identifying obstacles and creating plans, but also at the level of review and adjustment. Ideally this GOPDR script will become a habit for adults in the student’s life, thereby increasing the likelihood that it becomes a habit of thinking for the student with TBI. (See Tutorial on Self-Regulation/Executive Function Routines)</p> <p>GOAL: What’s the goal? What are you trying to achieve? What do you want to have happen? What’s it going to look like when you’re done?</p> <p>OBSTACLE: What is standing in the way of you achieving the goal? What is the problem?</p> <p>PLAN: So what’s the plan? What do you need to do? You need help? Want to do it as a team? Think that plan will work??</p> <p>PREDICTION: So how well do you think you will do? How many can you get done? On a scale of 1 to 10, how well will you do?</p> <p>DO: Apply the chosen solution.</p> <p>REVIEW: So how’d it work out? What worked? Anything that didn’t work? Why not? What are you going to try next time? How might you do it better?</p> <p>Source: http://www.projectlearnnet.org/tutorials/problem_solving.html</p>
Memory	Priming the Pump	<p>Priming the Pump (PTP) is a simple method to activate the memory circuits of the brain that will aid in memory encoding. This method works by an adult first securing the full attention of a student. When the student is focused, the adult tells the student that a few questions will be asked after the directions or instructions are given. After the directions are given, the student needs to quickly answer the questions when the adult stops talking. This common sense approach is built upon the observation that it is not enough to gain a student’s attention before speaking; one must also slightly raise the emotions of the student, which also activates the same neurological structures that aid in memory formation.</p>

Domain	Term	Definition
Memory	Strategy to slightly elevate emotions when teaching new concepts	See Priming the Pump noted previously.
New Learning	Chunking	<p>Chunking is a way of organizing information into familiar groupings. This is done with all sorts of information, including numbers, single words, and multiple-word phrases which are collapsed into a single word, to create acronyms. The main advantage of this type of mnemonic device is that it enhances retention and memory.</p> <p>Source: Alleydog.com's online glossary. http://www.alleydog.com/glossary/definition-cit.php?term=Chunking</p>
New Learning	Errorless Learning	<p>Students with severe cognitive and memory problems may benefit from a teaching approach referred to as errorless learning (Wilson & Evans, 1996). Errorless learning is based on a model of behavioral rehabilitation that involves discrimination training with early prompting and support that is systematically faded to ensure successful responding. In errorless learning, individuals are not allowed to guess on recall tasks, but are immediately provided with the correct response, instructed to read the response, and write it down (Mateer et al., 1997). If errors do occur they are followed by nonjudgmental corrective feedback (Ylvisaker et al., 2001). Source: http://www.brainline.org/content/2008/07/classroom-interventions-students-traumatic-brain-injuries_pageall.html</p>
New Learning	Gradual Release of Responsibility Model	<p>One way teachers can provide more targeted, individualized instruction is to use the gradual release of responsibility model (Pearson & Gallagher, 1983). This instructional model requires that the teacher, by design, transition from assuming “all the responsibility for performing a task...to a situation in which the students assume all of the responsibility” (Duke & Pearson, 2002, p. 211). This gradual release may occur over a day, a week, or a semester. Stated another way, the gradual release of responsibility “emphasizes instruction that mentors students into becoming capable thinkers and learners when handling the tasks with which they have not yet developed expertise” (Buehl, 2005). The Four Components to gradually release responsibility from the teacher to the student are: Focus Lessons – “I do it”; Guided Instruction – “We do it”; Collaborative Learning – “You do it together”; Independent Learning – “You do it alone”</p> <p>Source: http://www.glencoe.com/glencoe_research/Jamestown/gradual_release_of_responsibility.pdf</p>

Domain	Term	Definition
New Learning	Spiraling	<p>An approach to education that introduces key concepts to students at a young age and covers these concepts repeatedly, with increasing degrees of complexity.</p> <p>The idea of spiral curriculum is attributed to Jerome Bruner, who discussed it in his 1960 book, "The Process of Education." Proponents of spiral curriculum say that the approach helps students score better on tests and retain information longer than students who learn from curricula that take a massed approach. Source: http://everydaymath.uchicago.edu/about/why-it-works/spiral/</p>
New Learning	Experiential Learning	<p>Experiential Learning (or "learning by doing") is the process of actively engaging students in an authentic experience that will have benefits and consequences. Students make discoveries and experiment with knowledge themselves instead of only hearing or reading about the experiences of others. Students also reflect on their experiences, thus developing new skills, new attitudes, and new theories or ways of thinking. Experiential education is related to the constructivist learning theory.</p> <p>Source: http://www.newworldencyclopedia.org/entry/Experiential_learning</p>
New Learning	Forward/Backward Chaining	<p>The new behavior you want to build may be a series or chain of behaviors. A behavior chain is a series of related behaviors, each of which provides the cue for the next and the last that produces a reinforcer. Almost everything we do can be considered part of a behavior chain. For example, when you are reciting the alphabet, you start with "A", then "B", then "C" and so on until the task is completed at "Z".</p> <p>Each step serves as a cue for the next step; a chain is really a series of signals and behaviors. The completion of one behavior in a chain produces the signal for the next action. Saying "G" is the signal to say "H" next.</p> <p>Practically any complex behavior we do in the way of operant behavior is part of a chain or a multitude of chains: eating, getting dressed, using the computer, counting, brushing your teeth, riding a bike, walking to school and so on. Behavior chains are very important to all of us; as is the procedure for building chains, which is called chaining.</p> <p>Chaining is the reinforcement of successive elements of a behavior chain. If you are teaching your child the alphabet, you are attempting to build a chain, if you are teaching the tying of shoelaces, you are also attempting to build a chain.</p>

Domain	Term	Definition
		<p>There are two chaining procedures, forward and backward chaining.</p> <p>FORWARD CHAINING: Forward chaining is a chaining procedure that begins with the first element in the chain and progresses to the last element (A to Z). In forward chaining, you start with the first task in the chain (A). Once the child can perform that element satisfactorily, you have him perform the first and second elements (A & B) and reinforce this effort. Do not teach “A”, then teach “B” separately; “A” and “B” are taught together. When these are mastered, you can move to “A”, “B” and “C”. Notice they are not taught in isolation; hence the term ‘chain’.</p> <p>BACKWARD CHAINING: This is often a very effective way of developing complex sequences of behavior. In forward chaining, you are teaching A to Z; in backward teaching, you are teaching Z to A. Backward chaining is a chaining procedure that begins with the last element in the chain and proceeds to the first element.</p> <p>Source: http://www.bbbautism.com/aba_shaping_and_chaining.htm</p>
EF – Initiation	Use of contingency based interventions centering on video games	The use of contingency based interventions is based on the venerable behavioristic concept called the Premack Principle (or relativity theory), <i>high-probability behaviors</i> (those performed frequently under conditions of free choice) <i>can be used to reinforce low-probability behaviors</i> (e.g. school work). The allowance of a higher order behavior, such as video game play time, is contingent on work completion. Essentially, “If” the student does work, “then” he gets a desired reward.
EF – Planning EF – Organizational Skills	Report and Talk Aloud strategy	The effectiveness of this intervention is based upon the establishment of routine and having the student repeat the necessary steps to complete a future task. A student reports to a designated staff at midday and reads to the staff the tasks that need to be completed and how those tasks are to be completed. The student repeats this activity at the end of the day to another staff member before the student to leaves school. It is key that the student reads aloud and hears him/herself describe the tasks that are due and the steps to complete the task.
EF – Mental Flexibility	Guided Self-Reflection	A writing process (like journaling) that encourages students to reflect on personal experiences. Often written in response to assigned topics. Source: http://www.igi-global.com/dictionary/guided-self-reflection/37853

Domain	Term	Definition
EF – Reasoning	Scaffolding	<p>In education, <u>scaffolding</u> refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process. The term itself offers the relevant descriptive metaphor: teachers provide successive levels of temporary support that help students reach higher levels of comprehension and skill acquisition that they would not be able to achieve without assistance. Like physical scaffolding, the supportive strategies are incrementally removed when they are no longer needed, and the teacher gradually shifts more responsibility over the learning process to the student.</p> <p>One of the main goals of scaffolding is to reduce the negative emotions and self-perceptions that students may experience when they get frustrated, intimidated, or discouraged when attempting a difficult task without the assistance, direction, or understanding they need to complete it.</p> <p>Source: http://edglossary.org/scaffolding/</p>
EF – Reasoning	Teaching into meaningful concepts	<p>A Review of Research on Inquiry-Based and Cooperative Learning http://www.edutopia.org/pdfs/edutopia-teaching-for-meaningful-learning.pdf</p>
EF – Reasoning	Asking “why” questions	<p>“Why” questions help students to interrogate their own thought processes and clarifies for staff those steps in a student’s problem solving approach that are not effective, or faulty. Asking students “how” they arrived at an answer or “what” their approach is to a problem, also helps make a student’s hidden thoughts more explicit.</p>
Social/Emotional Competency	Functional Behavioral Assessment (FBA)	<p>Functional behavioral assessment is generally considered to be a problem-solving process for addressing student problem behavior. It relies on a variety of techniques and strategies to identify the purposes of specific behavior and to help IEP teams select interventions to directly address the problem behavior. A functional behavioral assessment looks beyond the behavior itself. The focus when conducting a functional behavioral assessment is on identifying significant, pupil-specific social, affective, cognitive, and/or environmental factors associated with the occurrence (and non-occurrence) of specific behaviors. This broader perspective offers a better understanding of the function or purpose behind student behavior. Behavioral intervention plans based on an understanding of "why" a student misbehaves are extremely useful in addressing a wide range of problem behaviors. Source: http://cecp.air.org/fba/default.asp</p>

Domain	Term	Definition
Social/Emotional Competency	Behavioral Intervention Plan (BIP)	Behavioral intervention plans (BIP) are detailed plans, designed for a specific student, focused on teaching, practicing and reinforcing new behaviors. BIPs are based on the data gathered during the FBA such as function, frequency, severity, consequence, etc.

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