STRATEGIES TO ENGAGE & INCLUDE ALL LEARNERS

2015 IDEAS CONFERENCE

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WHERE DO I START AS A SPECIAL EDUCATOR?

With the title in mind, complete the “Know” and “What I want to Know” section of your K-W-L. Be prepared to share!!!
KNOW YOUR KIDS!!!
KNOW YOUR KIDS!!!

SLS data (in Georgia – Student Longitudinal Data System) – ex. Lexile scores, attendance, state testing results.

ESEP – Psychological Reports & Goals – find out areas where your students have deficits – ex. Visual processing, attention/concentration, reading comprehension, spatial, memory/processing, etc.

Learning Styles Inventory – this helps all learners and you to plan.
KNOW YOUR KIDS!!!

ESEP – ILP’s (*Individualized Learning Plans*) – this is a sheet where you can create an individual plan for specific needs of special education students.

*Brain-Based Learning Strategies* – helps connect to the way the brain processes information.
QUESTION BREAK: WHAT DO YOU DO IN YOUR CLASSROOM TO LEVEL THE PLAYING FIELD?

Think-Pair-Share

1) **Individually** – (1 min) Write down 2-3 things you do in your classroom to help you design appropriate instruction for your set of kids.

2) **Pairs** – (1 min) narrow your strategies down to two in your pairs.

3) **Share** – (up to 2 min) share your ideas with the group.
WHERE TO START:
RECOGNIZING OUR TALENTS
HOW ARE WE LIKE THE PEACOCK & THE PENGUINS?

We each have our strengths, we need to recognize what each can add to the lesson or planning.

Don’t be afraid to be a peacock, things change in education, you should embrace change and also keep an open mind to new things that can help our kids!!!
1. **Deficits Reference Sheet** (based on IDEA information) – used weekly in planning

2. **Brain-based Learning Reference Sheet** (use in planning and creation of materials)

3. **Data Collection/Use** (using data to inform instruction – ex. Grouping strategies, remediation, ESEP goals, etc.)
4. Multiple Intelligences – Providing Choice

5. Communication/Flexibility (this is huge between co-teachers and necessary for the kids)

6. ILP’s and SLDS
INTENTIONAL PLANNING

Know your students' deficits (processing – visual, memory, attention/concentration, etc.)

**IDEA Specialized Instruction:** means adapting, as appropriate to the needs of the eligible child.

Three Areas to consider adapting include:

- **Content**
- **Methodology**
- **Delivery of Instruction**

**Basic Ideas for Three Areas:**

<table>
<thead>
<tr>
<th>Content</th>
<th>Methodology</th>
<th>Delivery of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Provide various levels of the same content to address student needs (can be various assignments covering the same topic) ✓ Multiple intelligence assignments ✓ Provide choices to compensate for learning styles ✓ Stations ✓ Split class – (inclusion) - provide a different delivery for same content (Maybe a virtual simulation for some and a hands-on lab or activity for another).</td>
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</tr>
</tbody>
</table>

First Step: Identify the needs of your students:

1. Academic Achievement
2. Functional Skills
3. Behavioral/Social Skills
4. Emotional Development
5. Motor Skills

**Short-term Memory Deficits**

1. Visual Cues
2. Prepare transitions
3. Chunk tasks
4. Color coding
5. Timer
6. Checklist

Possible Ways to Address:

1. Visuals – list of concepts/terms
2. Break up the task into smaller parts (i.e., for 20 matching definitions on a quiz, break it into four sections of 5)  
3. Color code directions
4. Provide a checklist for projects/assignments
5. Add a timer for pacing (during instruction/activities)
6. Reading strategies
INTENTIONAL PLANNING

Know your students deficits (processing – visual, memory, attention/concentration, etc.)

Note: a full copy of the resource is included in your handouts.
INTENTIONAL PLANNING

Brain-based strategies Resources

When Beginning
Access prior knowledge, use this information to teach each child accordingly.
- Remember: (provide resources)
  - Children are not a blank slate
  - Access patterns of thinking
  - Patterns of understanding and organizing
  - Patterns of doing, studying, writing a paper

Research
- Our brains have innate learning programs (Bjorklund, 2003).
- Repetition of information triggers long-term learning (Squire and Kandel, 2000).
- Eating carbohydrates during learning promotes long-term memory (Keele, 2005).
- Every night while we sleep 8 periods of dreaming provide differential strengthening of neuron connections for long-term memory and relearning deep causes repetition of the day’s information (Humes, Stolberg, & Walker, 2004).

What Can Teachers Control?

Repetition & Excitement

Find ways to have your students practice, especially with vocabulary! Research shows a student must interact with vocabulary in numerous ways in order to commit it to long-term memory!
### INTENTIONAL PLANNING

**Brain-based strategies Resources**

<table>
<thead>
<tr>
<th>Lesson Planning to Support Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) <strong>Motivation</strong> - provide something they already know, use music, visual aids, set a challenge, or stimulating technique.</td>
</tr>
<tr>
<td>2) <strong>Focus</strong> - (get their attention)</td>
</tr>
<tr>
<td>3) <strong>Acquisition</strong> - use graphic organizers, colors, scents, levels.</td>
</tr>
<tr>
<td>a) Use color paper for flashcards instead of white.</td>
</tr>
<tr>
<td>b) How many of the following can you use in a lesson: discovery, inquiry, hands-on, arts, integration, using a textbook, games, technology, research, creating something, practice, writing, drills, discussion, play?</td>
</tr>
<tr>
<td>4) <strong>Retention</strong> - (Practice)</td>
</tr>
<tr>
<td>5) <strong>Recall</strong> - (Review) - together, as a game, questions, etc.</td>
</tr>
<tr>
<td>Small - Citrus dryer sheets (reduce stress); Vanilla on cotton balls (anti-anxiety); Cinnamon (creativity).</td>
</tr>
<tr>
<td><strong>Brain Tip</strong>: Give a test on a Purple petal - reduces test anxiety!</td>
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<tr>
<td>6) <strong>Generalization/Application</strong> - students need the chance to apply a skill in a safe atmosphere.</td>
</tr>
<tr>
<td>7) <strong>Performance Assessment</strong> - Do it!</td>
</tr>
<tr>
<td>8) <strong>Feedback</strong> - return work quickly so they understand what they have done right or need to fix immediately.</td>
</tr>
</tbody>
</table>

**Presentation Slide Colors and Feelings:**
- **BLU**E - Creativity, reflection, & relaxation
- **YELLOW** - Excitement, creativity, alertness

**TELL ME AND I FORGET. SHOW ME AND I REMEMBER. INVOLVE ME AND I UNDERSTAND. - CHINESE PROVERB**
Using the following resources, how might you design a lesson to help the following students:

**Directions:** In Pairs - Pick a topic, create an opening, work period, and closing - just a description not a full lesson - then add how you might address differentiation and specialized instruction based on the students. BE PREPARED TO SHARE!

<table>
<thead>
<tr>
<th>Resources</th>
<th>Students (see sheets for specifics)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>IDEA Resource Sheet</em></td>
<td>1) John Doe - (MI)</td>
</tr>
<tr>
<td><em>Student ILP Form</em></td>
<td>2) Jane Doe - (LD)</td>
</tr>
<tr>
<td><em>Brain-based reference sheet</em></td>
<td>3) Joe Somebody - (LD)</td>
</tr>
<tr>
<td><em>Deficits Sheet</em></td>
<td>4) Jane Somebody - (LD)</td>
</tr>
<tr>
<td><em>Goals</em></td>
<td>5) Joe Somebody - (OH, LD)</td>
</tr>
<tr>
<td></td>
<td>6) Jane Blue - (LD)</td>
</tr>
<tr>
<td></td>
<td>7) Judy Girl - (LD)</td>
</tr>
</tbody>
</table>
EVOLUTION & BIOLOGICAL RESISTANCE LESSON PLAN EXAMPLE

**Warm-Up:**
Review what we are learning today, opening EOC review question

<table>
<thead>
<tr>
<th>Work Session/ Learning Activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Complete Natural Selections/Evolution mini-project (2 choices)</td>
</tr>
<tr>
<td>a) Famous Evolution Photographer</td>
</tr>
<tr>
<td>b) Evolution <strong>Euror Model</strong></td>
</tr>
<tr>
<td>2) Introduce the “Biological Resistance” mini-task literacy</td>
</tr>
</tbody>
</table>

| 3) Product choice was given in the mini-project (one is more visual/existential, the other is more visual/existential) choice A involves conceptualizing the concepts, whereas the Choice B **Euror** models are more straight forward. |
| 2) Exemplars provided to aid with completion of the project. |
| 3) Biological resistance projects will consists of low, mid, and high level reading assignments based on Lexile levels of students. |

**Differentiation:** (Include SDI for ESEP)

**Specialized Instruction:**
1) Vocabulary with color visuals to aid with vocabulary instruction - (Visual, short-term memory, & attention/concentration deficits) - John Doe, Joe Special, Jane Somebody
2) Recorded reading for literacy task - Jane Blue, John Doe
3) Checklists for Literacy Task - (Short-term memory, attention/concentration) - Jane Somebody, John Doe, and Joe Somebody
4) Timers (for pacing) - (Attention / Concentration) - John Doe & Joe Special

**Closing:**
Relating to the Standard - think-pair-share - what do you think leads to biological resistance?
ENVIRONMENTS:
MODELS OF CO-TEACHING

(Note: There are more, these are the 3 I used the most)

Parallel Teaching

Station Teaching

Team Teaching
**Lesson:** splitting the class into two groups, and teaching the same material

**Example:** this type of teaching works well in classes where students need more focus, or a topic is difficult and breaking students into smaller groups would be more appropriate - like probability in genetics.
Station Teaching works really well for a lab where students are completing multiple stations. Each teacher teaches different content to a group, then they switch groups and teach the content to the other group.

Example: Multiple intelligence labs with various stations, or two connected contents where order does not matter.
The next four slides are examples of a physical science multiple intelligences station activity. This activity was split between two teachers who instructed a set of three of the activities and then flipped groups of students.
Station Two: Illustration Station
(Visual/Spatial)

Directions: From the three activities below you must choose one to complete.

A. States of Matter Comic Book
Create a comic book story that includes four characters that will represent the four states of matter. Give each character human characteristics based on their physical/chemical state. Please include illustrations and an interesting story line. Each person will narrate their story to the teacher. Remember be CREATIVE!!!

B. Laws of Motion Children’s Storybook
Create a storybook that illustrates Newton’s three laws of motion. This storybook should be written on a 2nd or 3rd grade level so that a young student could understand the meanings of the three laws. Be specific for each law by giving a real life example for each in your story. You must have a minimum of three characters, one for each law. Remember be CREATIVE!!!

C. Sell your “Element”
For this choice, you will pick one metal, one metalloid, and one halogen element. For each of these elements, you will create an advertisement to sell your “element” to the class. You can do this with a single page ad or brochure. Each must contain the element’s name, atomic mass, atomic number, number of protons, number of electrons, number of neutrons, group & family it belongs to, and any unique properties or characteristics of that element. Make your advertisements appealing so that people would want to buy them!!! Remember be CREATIVE!!
Station Three: Manipulation Station
(Kinesthetic/Technology)

Directions: At this station, you will participate in manipulating three smart applications. You will investigate manipulating a "series circuit". You will also investigate manipulating a "parallel circuit". Finally, you will manipulate a "wave" interactive smart application. For each of these applications you will record your observations and results of the manipulation. For the two manipulation that involve circuits you will draw an example of each type of circuit. For the wave application you will draw and label the important features of a wave.
Station Five: Acid & Bases in Everyday Life (Existential)

Directions: For this station, you will be presented with six unknown household substances. In addition, you will be given a list of common household products along with their pH’s. You will test the pH of each unknown and use the list that is provided to discover its identity. You will record the unknown number and its identity along with the pH you measured for the substance. In addition, you will give an explanation for why the product might be an acid or base based upon its prescribed usage.
Station Six: The Dating Game (Interpersonal)

Directions: For this station, you will have a jar with red and green beads in it. You will also have a small bag of green beads. The purpose of this station is to simulate radioactive decay. We will pretend that the red beads represent decayed atoms of zircon, and the green beads are atoms that are not yet decayed. In your group of 3-6 you will pass around the jar and blindly pull out a bead without looking. If the bead is green you will return it to the jar. If the bead is red you leave it out to the side and replace it with a green one from your bag. You will continue this process for approximately 6 minutes the first round without stopping. You will record how many reds you picked during this time. Again without making any changes to the jar, you will conduct two more rounds, recording how many reds are removed each round.

1) What did you notice from one round to the next? What happened to the number of red atoms drawn in each round?
2) With each round was it easier or harder to draw a red atom? Explain why you think this is.
3) Graph your experiment with all three sets of data represented on one graph.
4) Challenge: What is the half-life of this atom based on what you learned in the simulation?
Team teaching involves teaching a lesson together interacting simultaneously throughout the lesson. Bouncing off one another adding to the lesson. This is what most teachers do.

This can be used with most types of lessons, but sometimes is not the most effective.
INSTRUCTIONAL STRATEGIES

Brain-based strategies & Multiple Intelligences

Goals & Accommodations

IDEA-based Deficit Strategies
1) **Multiple Intelligences:** In any presentation (smart, powerpoint, etc.) - I look at the incorporating as many different learning viewpoints as possible.

> Musical - up to date songs about processes (i.e., "Gotta get that ATP" - Cellular Respiration)
> Visual - lots of colorful picture examples, and cartoon examples for simplicity which I draw for them
> Interpersonal - think-pair-shares
DESIGNING THE LESSON

- Intraperonal - choices in notebook output
- Existential - real world connections - news video clips about real stories
- Kinesthetic - in smart quick games to review concepts
In the next 2 minutes think of an example you have used in your own classroom for three of the multiple intelligences - BE PREPARED TO SHARE!!

Intelligences: Interpersonal, Intrapersonal, kinesthetic, musical, logical/mathematical, existential, visual, verbal (auditory)
INTERACTIVE NOTEBOOK – MULTIPLE INTELLIGENCES OUTPUT EXAMPLE

(Adapted from Martin Teachworth and Brendan Casey)

LINGUISTIC/LOGICAL INTELLIGENCE
1. Vocabulary Card Instructions
   The purpose of a vocabulary card is to assist students in learning and understanding terms, phrases or concepts covered in class and necessary for understanding. Make on either 1/16 of sheet of paper or a 3 x 5 index card. The cartoon or diagram side is taped facing up. Use the vocabulary cards to review information by looking at the diagram and making the connection between the diagrams or pictures and the term. Even better, exchange notebooks with another student and use their vocabulary cards to see if you understand the term and your partner’s logic in explaining.

   Front Side – has a cartoon or diagram
   1. The diagram or cartoon must have at least 4 different colors (other than black and white).
   2. There should be a minimal amount of writing and explanations on this side of the vocabulary card.

   Back Side – Explaining the Words:
   1. Word (spelled correctly)
   2. Link – a word useful in remembering the word, the meaning should be known; often related or rhyming with the vocabulary word.
   3. Definition – meaning of word using terms the student understands (1 of the 3 sentences required)
   4. Usage Sentences – the 2 other sentences helping delineate the meaning of the vocabulary word. These should be student generated, not copied.

VISUAL INTELLIGENCE
7. Single Frame Cartoon Project
   The cartoon does not have to be funny.

   The Front of the Paper
   1. Single Frame cartoon (like a Farside)
   2. 4 colors maximum (besides black and white)
   3. Maximum 2 lines for a caption (speaking bubbles are okay), but not encouraged.

   The Back of the Paper
   1. The science concept being shown is stated.
   2. A paragraph explaining why or how the cartoon shows or addresses the concept stated is written.

EXISTENTIAL INTELLIGENCE
12. Letter to the Editor
   1. The letter MUST be from 2 to 4 paragraphs in length.
   2. The letter MUST contain the assigned topic or vocabulary term.
   3. Each of the assigned topic or vocabulary terms MUST be HIGHLIGHTED.
   4. YOU must state an opinion about the topic.
   5. At least 5 specific facts MUST be used to support the opinion.
   6. An illustration of the topic MUST be made after the letter.
(Adapted from Martin Teachworth and Brendan Casey)

**MUSICAL INTELLIGENCE**

17. Song or Rap Rhyming Poem
The poem must use the assigned vocabulary terms or concepts. There must be a title reflecting the major concept of the poem:
1. The song MUST use the assigned vocabulary or concepts.
2. There MUST be an illustration (4 color minimum) showing an understanding of the assigned topic and concepts.
3. There MUST be a 2 to 3 paragraph explanation after the song and illustration to explain how each covers and demonstrates the assigned concept and vocabulary.

**MATHEMATICAL-LOGICAL INTELLIGENCE**

24. Luck of the Dice
Roll a die and the number that comes up determines what you do. (Half page minimum):
1. Draw it (no words)
2. List 15+ words to describe it
3. Tell the + and – of it
4. Compare it to 3 things
5. Contrast it to 3 things
6. Connect it to your life

**VISUAL MODELLING**

19. Concept Bookmark
1. The letter MUST be from 2 to 4 paragraphs in length.
2. The letter MUST contain the assigned topic or vocabulary terms.
3. Each use of the assigned topic or vocabulary terms MUST be HIGHLIGHTED.
4. YOU must state an opinion about the topic.
5. At least 5 specific facts MUST be used to support the opinion.
6. An illustration of the topic MUST be made after the letter.
7. A minimum of 4 colors (black and white do not count) MUST be used to make the illustration.
8. A 3 to 5 sentence explanation of how the letter and illustration are related to the topic MUST be written.
PERSONIFICATION VOCAB.

**CHILDISH BOBBY**
- Definition: Fat
- Personification: Person is fat and chubby.
- This person likes to eat a lot and he also has lots of energy.

**EGG-MAN**
- Definition: Properly through protein.
- Personification: Gives off a good vibe and has good body function.
- Does not feel asleep easily.
- Likes to drink milk and egg.

**CANDY GIRL**
- Definition: Sugar
- Personification: Person is sugar.
- Girl, she likes sugar.
- Twirls, minis has on hair that smells sweet.

**BREAD MAN**
- Definition: Source of energy.
- Personification: Bread man, spreads bread all over.
- The world and is always happy.
INTERACTIVE NOTEBOOK – MULTIPLE INTELLIGENCES STUDENT OUTPUT EXAMPLES
Vocabulary
Hydrogen bonding: One water molecule attracts its Oxygento Hydrogen bonding like a magnet cause it attracts.

Heat capacity: Water doesn't change quickly. 
Flex: Heat capacity is like your body. Wood. Cause your body has heat.

Adhesion: Attraction to water. Adhesion is like contact cause the water stay still.

Cohesion: Attraction of one water. It's like a magnet holding to one water molecule.
EXAMPLE OF A SONG PROCESS
https://www.youtube.com/watch?v=V_xZuCPIHvk
DESIGNING THE LESSON

2) **Brain-based Strategies** - preparing lessons in smart, etc.
   > Color of background - (blue - creativity, relaxation and reflection; yellow - excitement, alertness)
   > Music - motivation
   > Retention - practice - review games, opportunities to apply material - creating analogies, etc.
   > Repetition - exposure of material in multiple contexts - visual, musical, practicing, etc.
Differentiation - creating ways for all students to learn through creative adaptations in the lesson.

1) **Graphic Organizers** (provide various levels to aid with deficits such as visual processing, and attention/concentration deficits.

2) **Chunk Material** (break material into smaller more management sections - this helps all kids not just special education kids!!)

3) **Utilize Multiple Intelligences** (in creating lesson/presentations, and in assignments and materials - give them the opportunity to experience the material multiple ways.)
4) **Choice boards** (various levels - low, mid and high) can be based on pre-test data, or other data

5) **Various levels of practice** (can also be based on data, or observation, or may be based on student comfort if students are given the opportunity to express their current level of understanding)
7) **Flexible Grouping** - may be homogeneous, heterogeneous, or student assessed placement

8) **Exemplars** - providing various levels of products to aid students in evaluating their own performance

9) **Rubrics** - provide students with exactly what they need to do in order to achieve a certain grade

10) **Tiered Lesson or Problems** - providing various levels or help within a lesson to learners based on their need

11) **Varying Text Level** - based on student need or Lexile information
**CHOICE BOARDS**

*(HIGH)*

**Square Assessment Directions:** For this assessment you MUST complete both of the activities listed below. Number 1 is a group activity (assigned) and number 2 is an individual activity.

1. **Natural Selection Lab**
   
   Natural Selection: "Wooly Worm Lab"
   
   In this lab you will study natural selection. During this exercise you will use wooly worms. You will be making observations and recording data then answering a set of questions to illustrate your understanding of natural selection.

2. **Evolution by Natural Selection**
   
   In this activity you will read and analyze the scenarios pictured. You must answer all of the questions to illustrate your understanding of the concept of natural selection.

   Natural selection, in a nutshell:
   
   [Image of two types of bugs: one with green and one without green.]

   [Diagram of bugs with and without green color highlighting the difference.]
Triangle Assessment Directions: For this assessment you MUST complete both of the activities listed below. Number 1 is a group activity (assigned) and number 2 is an individual activity.

1. Natural Selection Lab
   In this lab, you will explore how natural selection takes place and some of the reasons why. You will then answer the questions that follow.

2. Comparing Lamarck & Darwin Activity
   In this activity you will read background information on Darwin and Lamarck. Next you will compare the two theories. Finally, you will have an assortment of cards that either identify Lamarck or Darwin's views. You will sort these cards appropriately then on a sheet of paper explain how you sorted them and why.
Circle Assessment Directions: For this assessment you MUST complete both of the activities listed below. Number 1 is a group activity (assigned) and number 2 is an individual activity.

1. Natural Selection Lab
   - Hand & Blubber Activity
   - Expectations: Hands-on activity. You will complete a short experiment, make observations and answer the corresponding questions.

   This activity is an illustration of how animals have evolved to stay warm in icy water and cold air. Your job is to investigate how blubber aids in this process.

2. Natural Selection Activity
   - Student Packet
   - Expectations: You will read the scenarios in the packet. You MUST demonstrate your understanding of natural selection by successfully answer the questions that follow each.

   Use your natural selection knowledge to respond to the theoretical scenarios in the packet.
   1) Hammers & Natural Selection
   2) Natural Selection in Action

Adaptation doesn't involve trying.
DESIGNING THE LESSON

3) **IDEA-based strategies** - these are based on individual deficits

<table>
<thead>
<tr>
<th>Content</th>
<th>Methodology</th>
<th>Process</th>
</tr>
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<tbody>
<tr>
<td>1) Provide various levels of same content</td>
<td>1) Product Choices</td>
<td>1) Split class - (inclusion) provide a different delivery for same content.</td>
</tr>
<tr>
<td>2) Multiple Intelligences</td>
<td>2) Stations</td>
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SHORT & LONG-TERM MEMORY DEFICITS

**Short-term Memory Deficits**
1. Visual Cues
2. Prepare transitions
3. Chunk tasks
4. Color coding
5. Timer
6. Checklist

**Possible Ways to Address:**
- Visuals – with list of concepts/terms
- Break up the task into smaller parts (i.e., for 20 matching definitions on a quiz, break it into four sections of 5)
- Color code directions
- Provide a checklist for projects/assignments
- Add a timer for pacing (during instruction/activities)
- Reading strategies

**Long-term Memory Deficits**
1. Repetition
2. Checklists
3. Chunking assignments
4. Graphic organizers

**Possible Ways to Address:**
- Vocabulary instruction – add multiple ways to process the concepts (i.e., definition in own words, picture, example, non-example, analogy, etc.) – use multiple ways
- Graphic Organizers (reference later)
- Checklist – use as a study aid of concepts
- Study Guide with a checklist of topics being covered
CONCENTRATION/ATTENTION, AUDITORY PROCESSING, VISUAL PROCESSING, AND VISUAL/MOTOR SPATIAL DEFICITS

**Concentration/Attention Deficits**
1. Self-monitoring chart
2. Visual Study Guides
3. To-do lists
4. Graphic Organizers

Possible Ways to Address:
1. Study Guides – provide visuals and color coding to aid student
2. Graphic Organizers – providing clear expectations for information needed
3. To-Do Lists for daily activities/expectations

**Auditory Processing Deficits**
1. Note-taking assistance
2. Visual and auditory cues in sequence
3. Break tasks into steps

Possible Ways to Address:
1. Copies of notes, peer assistance
2. Step-by-step instructions-break down for tasks/assignments and expectations for completion (color coding may be helpful)

**Visual Processing Deficits**
1. Provide a reading guide
2. Color code visually
3. Increase white space
4. Provide note-take assistance

Possible Ways to Address:
1. Provide a reading guide – i.e. “what should I look for during reading”
2. Highlighters for reading
3. Increase the amount of space between questions on paper/activities

**Visual Motor/Spatial Deficits** (handwriting difficulties)
1. Highlighters
2. Extended time to write
3. Lined paper

Possible Ways to Address:
1. Notes – full copy with highlighter to follow along
2. Computer to type assignments when available
PROCESSING SPEED, NON-VERBAL, ABSTRACT REASONING, AND VERBAL REASONING DEFICITS

**Processing Speed Deficits**
- (slow response)
  1. Provide cue before calling on student to answer
  2. Provide wait time

**Possible Ways to Address:**
  1. Notify student in advance of calling on so they can prepare to respond

**Non-verbal Reasoning Deficits**
- 1. Step-by-Step Instructions
- 2. Extended time for writing

**Possible Ways to Address:**
  1. Type information on student computer
  2. Step-by-step instructions presented visually or auditory

**Abstract Reasoning Deficits**
- 1. Frequent checks for understanding
- 2. Preview vocabulary

**Possible ways to address:**
  1. Give notes on vocabulary prior to whole group instruction
  2. Proximity control so you can check on student more frequently to assess needs
  3. Metacognitive modeling
  4. Visualization strategies
  5. Activate prior knowledge (visuals/discussion)

**Verbal Reasoning Deficits**
- 1. Link prior knowledge
- 2. Pre-teach vocabulary
- 3. Provide word banks
- 4. Provide glossary of terms

**Possible Ways to Address:**
  1. Review
  2. Anticipation Guide (assess prior knowledge, provide what is necessary or missing)
  3. Glossary of terms – provide with visuals to assist for understanding
VISUAL (COLOR AID), AUDITORY (COLOR NOTES) SHORT-TERM MEMORY (COLOR NOTES WITH PICTURE EXAMPLES)
SB5b – Explain the history of life in terms of biodiversity, ancestry and the rates of evolution.
SB5c – Explain how fossil and biochemical evidence support the theory of evolution.

<table>
<thead>
<tr>
<th>Fossil Record</th>
<th>What is it?</th>
<th>What does it show?</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the fossils that we have discovered over the years.</td>
<td>Shows how species have changed over thousands or millions of years.</td>
<td>Elephants</td>
<td></td>
</tr>
</tbody>
</table>

What is the problem with the fossil record? **Fossil Record is Incomplete**
- Very few plants and animals become fossils.
- Even when they do, we find very few of them – fossils are embedded deep into rock. We have to wait for erosion to bring them to the surface.
- We'll probably never get a fossil of every single species.

<table>
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<tr>
<th>Homologous Structures</th>
<th>Different on outside, because use different purposes, but <strong>built</strong> the same on the inside.</th>
<th>Shows us organisms were derived from same common ancestor.</th>
<th>Human arm&lt;br&gt;Frog leg&lt;br&gt;Bat wing&lt;br&gt;Porpoise flipper&lt;br&gt;Horse leg</th>
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Diagram of Fossil Record and Homologous Structures
QUESTION BREAK:
SHARE YOUR KNOWLEDGE

Pick two deficits areas and come up with a strategy for each, BE PREPARED TO SHARE!!!
DATA COLLECTION: AN IMPORTANT PLANNING TOOL

This should be constant & on-going!!!

1) Pre- and Post-assessments (can be used for grouping strategies, starting point knowing your students previous knowledge)

2) Informal Questioning & Observations (can help with clarifying, clearing up misconceptions, and re-teaching needs)

3) Interactive Notebook Output Strategies (can help to understand their interpretation of the material/content)

4) Remediation (opportunity to master the material)

5) Quizzes

6) Specialized Instruction - is it helping the students - reviewing data on goals and class assignments, quizzes, tests, etc.
REMEDIATION EXAMPLE

### Macromolecules Standards Mastery

**I CAN:** (You MUST demonstrate these with evidence)

**SB1c.** Identify the functions of the four major macromolecules (i.e., carbohydrates, proteins, lipids, nucleic acids)

1. Name the four macromolecules and tell which foods each one can be found in.
2. Describe the monomer and polymer of each macromolecule.
3. Identify the function of each macromolecule.
4. Explain the consequences if a person did not have such macromolecules.

**Directions for Mastery:** (Note: Each step/question requires significant evidence to support your reasoning)

| Step | Photo | Data
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<tbody>
<tr>
<td>1</td>
<td></td>
<td>Macromolecule Standards</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Macromolecule Reflection</td>
</tr>
</tbody>
</table>

**STEP 1: Information Review and documentation (input) of your comprehension of the text.**

**LOCATION:** On the reading document which will be folded in half and stapled in your notebook to the right page where you paste other directions and information from this exercise.

1. Review the handout given by the teacher to refresh yourself on macromolecules (i.e., lipids, proteins, nucleic acids, and carbohydrates).
2. Read the standard above SB1c. — Explain in YOUR OWN WORDS what it means.
3. During reading of the handout, you must take notes on this document to illustrate your understanding of the material you are reading (this will be modeled and explained before you begin). You will use the “stop and jot” method on your actual article in question.
4. After reading your will summarize the requirements from the “I CAN” statements above (1-4) listed below the standard.

**STEP 2: Mindmap (output)**

**LOCATION:** On the left page of your notebook (add) your creative output from your review of the handout.

5. Create a “Mindmap” that illustrates your understanding of the functions of the four major macromolecules and why they are important to the functioning of your body. For each macromolecule you must also include a minimum of its building block (monomer), its polymer, what it is found in (food or body) and the consequence of no longer having that macromolecule. (i.e., what might happen if that macromolecule was no longer
Macromolecules Standards Mastery

**I CAN** (You MUST demonstrate these with evidence)

SB1c. Identify the functions of the four major macromolecules (i.e. carbohydrates, proteins, lipids, nucleic acids)

1. Name the four macromolecules and tell which foods each one can be found in.
2. Describe the monomer and polymer of each macromolecule.
3. Identify the function of each macromolecule.
4. Explain the consequences if a person did not have each macromolecule

**Directions for Mastery:** (Note: Each step/question requires significant evidence to support your reasoning).

**STEP 1:** Information Review and documentation (input) of your comprehension of the test.

**LOCATION:** On the reading document which will be folded in half and stapled in your notebook to the right page where you paste other directions and information from this exercise.

1. Review the handout given by the teacher to refresh yourself on macromolecules (i.e., lipids, proteins, nucleic acids, and carbohydrates).
2. Read the standard above SB1c. - Explain in YOUR OWN WORDS what it means.
3. During reading of the handout, you must take notes on this document to illustrate your understanding of the material you are reading (this will be modeled and explained before you begin). You will use the “step and jet” method on your actual article in question.
4. After reading your will summarize the requirements from the “I CAN” statements above (1-4) listed below the standard.
Macromolecule of Life Remediation

Directions: Read the selection below. During your reading you will complete a "stop and jot" reading activity. This means you will periodically about every paragraph. Pause and write down "main ideas," "reflection," "questions you may have," "oh hells," you may have and any other information which might help you better understand each of the four major macromolecules.

Written by Christy Grant, August 22, 2020

**Carbohydrates**

**Nerdy Column**

Carbohydrates are essential to all living things. These important macromolecules of life are made of tiny monomers known as "monosaccharides." These tiny molecules are as the name implies literally "mono" meaning "one" and "saccharide" meaning sugar, or simply one sugar. Glucose is a common example of this one sugar.

\[ \text{Glucose} = \text{C}_6\text{H}_{12}\text{O}_6 \]

Carbohydrates are important to your body because the macromolecules help you to obtain energy you need to survive. This is their main function for your body to provide your energy. Adequate intake of carbohydrates help to give your body energy. Aids for workouts and normal brain functioning. Almost all types of food provide you with carbohydrates with the exception of meat, eggs and some types of seafood. Some common examples you may be aware of include but are not limited to the following: bread, potatoes, candy, pastas, rice.

Carbohydrates are your body's main fuel source!!!
CLOSING/QUESTIONS:

Complete the L portion of your K-W-L and please share.
How can I help you, are there any questions?

Thank you for attending and participating!!!!