In this discussion, we will spend some time exploring learning preferences and brain based learning.
Let’s begin considering the adult learner. Imagine yourself. We are generally goal oriented and autonomous, making decisions for ourselves bringing our life experiences to the learning scenario. We want information that is applicable and relevant to our needs. Flexibility is not our strong suit. We do not have time for information that we cannot use.
There are many methods to determine the type of learner you are. On this slide are two methods. The first is an online learning styles quiz. You may also want to investigate the information on Howard Gardner’s Multiple Intelligences. Click the hyperlink to view the video.
Use this slide to gain more information on the Multiple Intelligences theory.
The importance of understanding how we learn is directly related to our students’ learning preferences and how we teach! Use the hyperlinks to add to your understanding.
Judy Sweeney, from Onion Mountain Technology demonstrates another way of determining learner preference. The eye test is but one way to quickly determine the learning style of your students. Ask them a question that they will need to contemplate. Watch their eyes. Which way did they move while searching for the answer. See the next slide for the results.
The direction of the eye movement will give you a strong indicator of the individual’s learning style.
As you can see from this slide, the direction of the eye movement can give us a better idea of the type of learner, making it easier for us to meet their unique needs.
We want to use the information on learning styles and connect it to curriculum and resources. This slide shows the connection between multiple intelligences and observable actions.
Here we are connecting those same intelligences to the digital technologies that support them.

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Digital Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>Keyboard, electronic mail, speech recognition devices, text bridges</td>
</tr>
<tr>
<td>Logical</td>
<td>Graphing calculators, search engines</td>
</tr>
<tr>
<td>Visual</td>
<td>Monitors, digital cameras, camcorders, scanners</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>Mouse, joystick, track ball, assistive technologies</td>
</tr>
<tr>
<td>Music</td>
<td>Speakers, CD-ROM discs and players</td>
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<tr>
<td>Intrapersonal</td>
<td>Online forms, real time projects</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Chats, message boards, webinars, instant messages</td>
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<tr>
<td>Naturalist</td>
<td>File managers, semantic mapping tools</td>
</tr>
<tr>
<td>Existential</td>
<td>Virtual reality, virtual communities, blogs, wikis, simulations</td>
</tr>
</tbody>
</table>
Did you know that 75% of teachers are sequential and analytical presenters and we tend to teach the way we learn. This means that 70% of teachers teach in a way different from their students. This is a huge disconnect!
The elements on this slide demonstrate some of the qualities of brain based learning.
I like to think of brain based learning as a ‘toolbox’ approach. We each carry a toolkit with us, sometimes with real stuff and other times, virtual. Each time you meet a new student, you will pull out your toolkit to see what tool is most appropriate.
Creating a safe, nurturing environment is important to providing students with the opportunity to take risks and move forward.
The YouTube video below provides an overview of Brain Based Learning. (6 mins)

**What is Brain Based Learning?**

Brain-Based Learning Theory is based on the structure and function of the human brain. As long as the brain is not prohibited from fulfilling its normal processes, learning will occur.

View the video to gain additional information on brain based learning.
With a basic understanding of brain based research, let’s take a look at a few details. Research has shown that when one is under emotional stress, the flow of chemicals needed for synapses is diminished. Think about the students who come into the classroom and are not ready for learning because of family issues. Are you aware???
Novelty and humor go hand in hand. When you have to teach a new concept, try using humor to make the information stick!
We know there is a difference between boys and girls. Review the content of this slide to see some additional differences to consider.

- Boys need more work space
  - Stress increases if not enough
- Girls better with auditory perception and discrimination
- Boys better with visual perception and discrimination
Providing different seating arrangements and positions can certainly provide a motivating and engaging learning environment.

- Sit in a different location after each break
  - helps increase learning and participation

- Allow to choose
  - either formal (desks) or informal (pillows, cushions)
  - perform significantly better on English and math tests
There has been a great deal of research that focused on using color to support reading, writing and attention. This slide provides some basic information.

- Affects emotion and mood
  - Yellow + red affect arousal state—blood pressure
  - Blue + green calming
  - Pink beneficial for emotionally distraught people
- Memory for color is stronger than words and objects
- 2/3 students with ADHD require color
- 40% of the regular population could use color
Keeping the brain pumped for learning can be accomplished through movement! Movement can be defined as gross motor, but also fidgeting, doodling, writing, typing, using a mouse, etc.

- **Exercise and Learning**
  - Aerobic exercise…improved short term memory, reaction time and creativity
  - Improves speed of mental recall

- 20% of learners learn best when they can move while learning
This slide provides information on the amount of movement needed by adolescents.

- 50% need extensive mobility while learning
- 25% need occasional mobility
- 25% need minimal mobility
Here we look at the movement of standing and how it supports learning.

- **Standing**
  - sends more blood to the brain
  - activates the CNS to increase neural firing

- **Standing helps with**
  - attention & arousal
  - increased information processing speed by 5–20%,
  - increased blood flow and oxygenation by 10–15%.
This slide offers information on the amount of time needed by individuals. You will want to make sure your instruction provides breaks (Q & A, reflection, writing, etc.). An interesting piece of information is that we should plan for 1 minute of instruction for every chronological year, with 20 minutes for adults. That doesn’t mean you stop instructing, you just have to alter it a bit to allow for processing and attention.