



Indiana
Department of Education
**Educational
Neuroscience
Toolkit**

Built Upon A
Neurodevelopmental Culturally
Responsive Framework



Infographic created by Dr. Brandie Oliver, 2018

100 Days of Educational Neuroscience

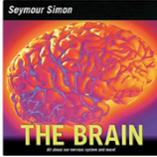
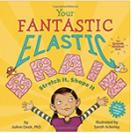
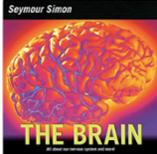
Scope and Sequence

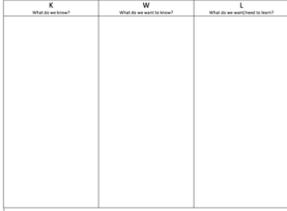
Teachers can use the 100 days of educational neuroscience to strategically implement lessons in the classroom. Use 2-3 lessons a week to discuss and reflect with students for five to ten minutes. The lessons are laid out in a manner that builds on previous understanding and knowledge. The guiding questions, strategies, and resources are intended to be a guide. The hope is that each teacher will bring a personal touch to each conversation, each year with uniquely different groups of students.

Teaching Brain Aligned Content for Engagement, Relationship, and Regulation

<p>Day 1: The Brain Neuroanatomy Guiding Question: What is the brain like?</p>	<p>Strategies/Activity Create brain storm lists in small groups so students can work together with guessing what the brain is like. After some guessing and wondering, provide them with a few objects like a three-pound weight, tofu, Jello, a jug of water and/or some type of fat. Discuss how the brain shares many of the characteristics from the objects. <u>To Do:</u> Create the brain is like statements. The brain is like...</p>	<p>Resources https://www.coolkidfacts.com/facts-about-the-brain-for-kids/ http://www.sciencekids.co.nz/sciencefacts/humanbody/brain.html https://www.healthline.com/health/fun-facts-about-the-brain</p>
<p>Day 2: The Brain Neuroanatomy Guiding Question: What is the brain like?</p>	<p>Strategies/Activity Watch and then discuss and reflect on video.</p>	<p>Resources <u>Elementary:</u> https://www.youtube.com/watch?v=-nH4MRvO-10 <u>Secondary:</u> https://www.youtube.com/watch?v=XSzsI5aGcK4</p>
<p>Day 3: The Brain Neuroanatomy Guiding Question: What is the brain like?</p>	<p>Strategies/Activity Read aloud and engage in discussion, questioning, wondering, all while adding new background understanding to learning.</p>	<p>Resources <u>Elementary:</u> Book: <i>The Fantastic Elastic Brain</i>, By: JoAnn Deak, Ph.D.</p>



	<p><u>To Do:</u> Divide book into two day read aloud. Choose intentional stopping points for emphasis.</p>	<p><u>Secondary:</u> <i>The Brain</i> By: Seymour Simon</p> 
<p>Day 4: The Brain Neuroanatomy Guiding Question: What is the brain like?</p>	<p><u>Strategies/Activity</u> Read Aloud and engage in discussion, questioning, wondering, all while adding new background understanding to learning.</p> <p><u>To Do:</u> Complete book in read aloud today.</p>	<p><u>Resources</u> <u>Elementary:</u> Book: <i>The Fantastic Elastic Brain</i>, By: JoAnn Deak, Ph.D.</p>  <p><u>Secondary:</u> <i>The Brain</i> By: Seymour Simon</p> 
<p>Day 5: The Brain Neuroanatomy Guiding Question: What is the brain like?</p>	<p><u>Strategies/Activity</u> Pass out brain shaped papers for exit slips as students write out or draw what they have done over the past 24 hours and what part of the brain did this occur or impact? <u>To Do:</u> Post student responses to exit slip.</p>	<p><u>Resources</u></p> 
<p>Day 6: The Brain Neuroanatomy Guiding Question: What do you know about the brain?</p>	<p><u>Strategies/Activity</u> Pre-Assessment: Brain Jeopardy Online Activity Complete the activity whole group and discuss as you work through the questions. At the end, note your score for later comparison to post assessment.</p>	<p><u>Resources</u> Brain Jeopardy https://jeopardylabs.com/play/brain-aligned-teaching7</p>
<p>Day 7: The Brain Neuroanatomy Guiding Question: What do you know about the brain?</p>	<p><u>Strategies/Activity</u> View Hand Model of the Brain video and discuss. Practice creating and identifying parts of the brain with hand models. Remember to use partner's names at the beginning and end of the activity/share. How could using this hand model be helpful to individuals, whole group, and in other environments?</p>	<p><u>Resources</u> Hand Model of the Brain https://www.youtube.com/watch?v=5CpRY9-MIHA</p>

	<p><u>To Do:</u> Create an anchor chart identifying amygdala, prefrontal cortex, and hippocampus. Teachers and students can begin to create a Brain Area in the classroom where findings and questions are posted.</p>	
<p>Day 8: The Brain Neuroanatomy Guiding Question: What does the brain control?</p>	<p><u>Strategies/Activity</u> Watch and discuss areas of the brain from the Sentis video from resources. What new learning did we take away? What are the names of these parts of the brain? <u>To Do:</u> Add new learning to anchor charts with labels, small sticky notes, and/or pictures.</p>	<p><u>Resources</u> Sentis Video: Areas of the Brain https://www.youtube.com/watch?v=5_vT_mnKomY&index=2&list=PL</p>
<p>Day 9: The Brain Neuroanatomy Guiding Question: What do you want to know about the brain?</p>	<p><u>Strategies/Activity</u> Spend time reviewing and looking over notes from the week and then create a KWL chart for future learning opportunities, relevancy, relationships, and engagement. <u>To Do:</u> Display individual or group questions to return to in the near future. Use these guiding questions to support curriculum, morning meeting, advisory, discussion, and/or relationship connection.</p>	<p><u>Resources</u> https://www.youtube.com/watch?v=kMKc8nfPATI</p> 
<p>Day 10: The Brain Neuroanatomy Guiding Question: What do you know about the brain?</p>	<p><u>Strategies/Activity</u> Post Assessment: Brain Jeopardy Online Activity</p>	<p><u>Resources</u> Brain Jeopardy https://jeopardylabs.com/play/brain-aligned-teaching7</p>
<p>Day 11: The Brain Neuroanatomy Guiding Question: What three areas of the brain will we be focusing on when discussing and learning about</p>	<p><u>Strategies/Activity</u> We have spent time talking about what the brain is like and introducing the areas of the brain. This week we will look closely at the prefrontal cortex, hippocampus, and amygdala. Today we are going to spend time reviewing, reflecting, and connecting to what we will be learning throughout this week.</p>	<p><u>Resources</u> What are the parts of the brain? https://www.youtube.com/watch?v=jdJ5eq6iNPA</p>

educational neuroscience?		
<p>Day 12: The Brain Neuroanatomy Guiding Question: What is the prefrontal cortex?</p>	<p>Strategies/Activity Prefrontal Cortex- Where we do life (cognitive, emotional, behavioral functioning). The prefrontal cortex goes offline when faced with danger (fear or stress). The prefrontal cortex communicates through words, spoken language. Teach students that their prefrontal cortex is where decision making happens - we want to be in our prefrontal cortex at school! Teach students to put their hands over their forehead to find their prefrontal cortex. <u>To Do:</u> Create an anchor chart for executive functions and reflect throughout the day when we are using the prefrontal cortex.</p>	<p>Resources https://www.youtube.com/watch?v=tLKTJ8igZ9I https://www.youtube.com/watch?v=IfKLMqpjfWs https://www.youtube.com/watch?v=REo3fzja5xs</p>
<p>Day 13: The Brain Neuroanatomy Guiding Question: What is the prefrontal cortex?</p>	<p>Strategies/Activity Prefrontal Cortex- Where we do life (cognitive, emotional, behavioral functioning). The prefrontal cortex goes offline when faced with danger (fear or stress). The prefrontal cortex communicates through words, spoken language. Teach students that their prefrontal cortex is where decision making happens - we want to be in our prefrontal cortex at school! Teach students to put their hands over their forehead to find their prefrontal cortex. <u>To Do:</u> Review the anchor chart and add new learning from today's discussion.</p>	<p>Resources https://www.youtube.com/watch?v=FZLXggsK6oA https://www.understood.org/en/learning-attention-issues/child-learning-disabilities/executive-functioning-issues/3-areas-of-executive-function</p>
<p>Day 14: The Brain Neuroanatomy Guiding Question: What is the hippocampus?</p>	<p>Strategies/Activity Hippocampus Formation of new memories and learning emotions. Chronic stress causes increased levels of cortisol and adrenaline that can damage and kill cells in the hippocampus. Why is memory important for learning at school?</p>	<p>Resources https://www.youtube.com/watch?v=5EyaGR8GGhs https://www.youtube.com/watch?v=XvjrqOTNa8Y</p>

	<u>To Do:</u> Highlight the hippocampus on anchor chart and its function.	
Day 15: The Brain Neuroanatomy Guiding Question: What is the hippocampus?	<u>Strategies/Activity</u> Hippocampus Formation of new memories and learning emotions. Chronic stress causes increased levels of cortisol and adrenaline that can damage and kill cells in the hippocampus. Why is memory important for learning at school? <u>To Do:</u> Review the anchor chart and add new learning from today's discussion.	<u>Resources</u> https://www.kidsdiscover.com/quick-reads/meet-hippocampus-memories-go-make-sense/ http://brainmadesimple.com/hippocampus.html
Day 16: The Brain Neuroanatomy Guiding Question: What is the amygdala?	<u>Strategies/Activity</u> The amygdala is the alarm center for the brain. It is the emotional station for our brain and it can make our prefrontal cortex go offline and disrupt our ability to think. The amygdala communicates through emotions. When the amygdala is firing we need to regulate/calm. <u>To Do:</u> Label the amygdala on anchor chart and its function.	<u>Resources</u> Bring in almonds or small rocks in the shape of the amygdala to support discussion of amygdala. https://www.youtube.com/watch?v=d_5DU5opOFk&index=3&list=PLq1Cit1ObKYTqgMpmujruBllvXucAEwzD
Day 17: The Brain Neuroanatomy Guiding Question: What is the amygdala?	<u>Strategies/Activity</u> The amygdala is the alarm center for the brain. It is the emotional station for our brain and it can make our prefrontal cortex go offline and disrupt our ability to think. The amygdala communicates through emotions. When the amygdala is firing we need to regulate/calm. <u>To Do:</u> Review the anchor chart and add new learning from today's discussion.	<u>Resources</u> http://brainmadesimple.com/amygdala.html
Day 18: The Brain Neuroanatomy Guiding Question: Where is the prefrontal cortex,	<u>Strategies/Activity</u> Classroom community creates Brain Hats from resources. Spend time wearing, discussing and reflecting on learning from the week. <u>To Do:</u> Spend time creating brain hats to demonstrate knowledge of brain regions.	<u>Resources</u> Brain Hat Activity https://steameducation.wordpress.com/2012/03/21/brain-hat-activity/ Momentous Institute http://momentousinstitute.org/video-library

amygdala, and hippocampus?		
<p>Day 19: Focused Attention Practices</p> <p>Guiding Question: What is a focused attention practice?</p>	<p>Strategies/Activity</p> <p>A focused attention practice is an exercise to quiet the body and focus the mind. The practices calm and soothe the limbic brain and allow us to return to a calm baseline. Complete your first focused attention practice as a class. Discuss and reflect after focused attention practice. How do you feel? What do you notice about your body? Mind? Accept positive and negative feedback as this is creating a safe space to share.</p> <p><u>To Do:</u> Notice. Notice who is participating and providing feedback and connect with those students who need support.</p>	<p>Resources</p> <p>Focused Attention Practice</p> <ol style="list-style-type: none"> 1. Begin with tracing our fingers of each hand with an inhale and exhale! 2. Start for only 30 seconds or less and build up time as a challenge for the class. <p>Always make this a choice and reflect for a minute afterwards. (See Focused Attention Practice resource for a list of other practices.)</p> <p>https://www.edutopia.org/blog/brain-breaks-focused-attention-practices-lori-desautels</p>
<p>Day 20: Focused Attention Practices</p> <p>Guiding Question: What is a focused attention practice?</p>	<p>Strategies/Activity</p> <p>Review the purpose of a focused attention practice. Spend time completing the same focused attention practice from previous day, adding on a few seconds if students are ready. Discuss and reflect after focused attention practice. How do you feel? What do you notice about your body? Mind? Accept positive and negative feedback as this is creating a safe space to share. Anyone feel differently today than yesterday?</p> <p><u>To Do:</u> Create an anchor chart with essential agreements for focused attention practices in the classroom. Have students create definition and agree on essential agreements.</p> <ol style="list-style-type: none"> 1. Quiet Body (hands, feet, mouth) 2. Choice to participate (respectful) 	<p>Resources</p> <p>Videos to Support Buy-in</p> <p>Kobe Bryant</p> <p>https://www.youtube.com/watch?v=ucNODrsGdx0&list=PLmWktbOLIZuaHEVS4dhqz8DyOTQ1eYIWO&index=3</p> <p>Celebrities that Meditate</p> <p>https://www.youtube.com/watch?v=XgtDPiZNefY</p> <p>Teens</p> <p>https://www.youtube.com/watch?v=OKgWaBc6e38</p> <p>Primary Elementary</p> <p>https://www.youtube.com/watch?v=9CdPQ7X1MzU</p> <p>http://www.mindfulschools.org/</p> <p>https://www.youtube.com/watch?v=7zpo04Xqz1w&list=PLmWktbOLIZuaHEVS4dhqz8DyOTQ1eYIWO&index=5</p>

		https://www.youtube.com/watch?v=SCR7OfRuQd4&index=11&list=PLmWktbOLIZuaHEVS4dhqz8DyOTQ1eYIWO https://www.youtube.com/watch?v=_MqVd8XIShM&index=15&list=PLmWktbOLIZuaHEVS4dhqz8DyOTQ1eYIWO https://www.youtube.com/watch?v=GVWRvVH5gBQ https://www.youtube.com/watch?v=hKnRKy5Wu7c
Day 21: Focused Attention Practices Guiding Question: What are the benefits of focused attention practice?	Strategies/Activity Focused Attention Practices have many benefits. First they calm the limbic brain activity and sympathetic nervous system inviting the parasympathetic nervous system in! They also activate executive functions in the prefrontal cortex in particular, sustained attention and emotional regulation helping us to create a pause and a bit of reflection. These two strategies are critical when priming the brain for cognition.	Resources Continuing sharing from video resources in Day 17. Take time each day at this stage to reflect on how the body and mind feels before, during and after focused attention practice.
Day 22: Focused Attention Practices Guiding Question: How is focused attention practice impacting me?	Strategies/Activity To Do: Create an anchor chart displaying different focused attention practices as you try each one. Before introducing new practices, spend time mastering each focused attention before you move to another one. We want students to feel comfortable and confident with the practices before being introduced to more practices.	Resources Continuing sharing from video resources in Day 17. Take time each day at this stage to reflect on how the body and mind feels before, during and after focused attention practice.
Day 23: Focused Attention Practices	Strategies/Activity Students should be feeling comfortable with the idea of focused attention practice, what it is, and the benefits of participating each day. Let's talk about how to breath during focused attention practices.	Resources https://www.youtube.com/watch?v=c3YyjUmDapc https://www.youtube.com/watch?v=Jd78W66mA2U&t=124s

<p>Guiding Question: How to breath during focused attention practice?</p>		<p>https://www.youtube.com/watch?v=WmLmu3PDyx0</p>
<p>Day 24: Amygdala Guiding Question: How do emotions impact our thinking and actions?</p>	<p>Strategies/Activity Emotions are an important part of each day for all of us. What happens in the brain when we experience positive and negative emotions? Connection: When we take time to engage in focused attention practices each day, this helps create pause when we become overwhelmed with emotions in a difficult situation. Pausing allows us to respond to an incident rather than react to it.</p>	<p>Resources Sentis: Emotions and the Brain https://www.youtube.com/watch?v=xNY0AAUth3g</p> <p>Books About Emotions: <i>Today I Feel Silly and Other Moods That Make My Day</i> - Jamie Lee Curtis <i>The Feelings Book</i> - Todd Parr <i>The Way I Feel</i> - Janan Cain <i>What Do You Do with a Problem?</i> Kobi Yamada <i>What Do You Do with an Idea?</i> Kobi Yamada <i>What Do You Do with a Chance?</i> Kobi Yamada</p>
<p>Day 25: Emotions and The Brain Guiding Question: How do emotions occur in the brain?</p>	<p>Strategies/Activity Watch Inside Out clip and share that tomorrow the whole group will discuss the clip and how we are sharing our emotions. Watch what feelings you notice and how they change from the film Inside Out Inside Out. When have you felt similar emotion?</p>	<p>Resources Inside Out Clips https://www.youtube.com/watch?v=8Cn1pYnAZSE</p>
<p>Day 26: Emotions and The Brain Guiding Question: How are you sharing your emotions to support well-being?</p>	<p>Strategies/Activity Let's talk about the Inside Out clip from yesterday and share the emotions we have most often each day and what is causing those in our brains. Here are some questions that will drive our learning over the next two days!</p>	<p>Resources These questions were designed for promoting student discussion, self-reflection, and self-awareness. Dr. Dan Seigel's research reports that, "What is sharable is bearable." Sadness helped Joy in the film, and your own sadness can help you.</p> <ul style="list-style-type: none"> • How do you cope with Sadness? • Can you use your sadness to feel better? How? • What would happen if we never felt sadness? • Is it sometimes good to keep sadness inside a circle so that it does not spread and get out of control? Why? <p>Fear and anger can protect and motivate us.</p> <ul style="list-style-type: none"> • When was fear needed in your life?

		<ul style="list-style-type: none"> • How did fear help you? • What is the perfect amount of fear? • What happens to our thinking and problem solving when we carry too much fear or sadness? • How does anger show up in your brain? • Has anger ever helped you? • How do you typically handle your anger? <p>Disgust keeps us from being poisoned physically and socially.</p> <ul style="list-style-type: none"> • How has the feeling of disgust helped you? • How has expressing disgust hurt your relationships or experiences? <p>Joy plays the leading role among the feelings in Riley's brain.</p> <ul style="list-style-type: none"> • Does joy always play the leading role in our brains? • What happened when joy and sadness left headquarters? • How do we see joy in your brain? • What creates joy to take over your brain? <p>Imagine having no feelings at all.</p> <ul style="list-style-type: none"> • What would life be like if we didn't have feelings? • Describe two positive changes in our life if we didn't have feelings. • Describe two negative changes that could occur in a life with no feelings.
<p>Day 27: Emotional Contagion Guiding Question: What is emotional contagion?</p>	<p>Strategies/Activity Emotional contagion is the phenomenon of having one person's emotions and related behaviors directly trigger similar emotions and behaviors in other people. This happens because of mirror neurons. After watching the video spend quiet time reflecting on the question, "What are you sharing?"</p>	<p>Resources Emotions and the Brian https://www.youtube.com/watch?v=xNY0AAUtH3g&t=3s</p> <p>Are Emotions Contagious? https://www.youtube.com/watch?v=rNGeNzoTPq0</p>
<p>Day 28: Emotional Contagion Guiding Question: What is emotional contagion?</p>	<p>Strategies/Activity It is important to be aware of our brain state and what we are sharing as we enter a space. Choose one of the videos from resources and discuss whole group. How does emotional contagion impact empathy in our classroom, school, state, country, and world?</p>	<p>Resources Are Your Emotions Contagious? https://www.youtube.com/watch?v=HTFdMwCXpMw</p> <p>Empathy and Mirror Neurons https://www.youtube.com/watch?v=XzMqPYfeA-s&list=RDQMDzvo_A7NaXY</p>

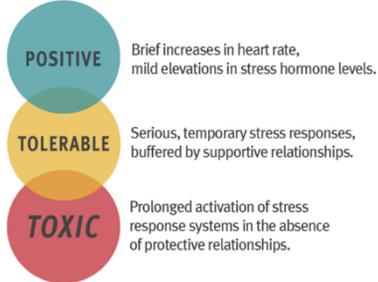
<p>Day 29: Mirror Neurons Guiding Question: What are mirror neurons?</p>	<p>Strategies/Activity Mirror neurons allow us to communicate without talking. Mirroring is one brain reflecting and interpreting the actions, intentions, and emotions of another brain. Essentially, we are human magnets, picking up other's feelings, thoughts, and actions subconsciously. Think of a time in your life when someone's actions or bad mood was felt by you even if you were not directly involved with that person. Share out.</p>	<p>Resources Mirror Neurons Allow Us to Understand Each Other https://www.livescience.com/11002-mirror-neurons-understand.html</p>
<p>Day 30: Mirror Neurons Guiding Question: How do mirror neurons work?</p>	<p>Strategies/Activity Stand in front of the class with a big cold glass of ice water and drink it slowly. Take deliberate sips and watch students. Continue to talk to students about how delicious this water tastes! Take time to process through whole group discussion. How did this make you feel? What did you experience as you watched this person slowly sipping and enjoying the ice cold water?</p>	<p>Resources</p>
<p>Day 31: Amygdala Guiding Question: What role does the amygdala play in the brain?</p>	<p>Strategies/Activity The amygdala is the alarm center for the brain and does not respond to words but emotions. When your amygdala is alerted, your prefrontal cortex goes offline. Your amygdala keeps you safe, helps you to process emotions, and decide between fight or flight.</p>	<p>Resources Two Minute Neuroscience: Amygdala https://www.youtube.com/watch?v=JVvMSwsOXPw Quantum University–Amygdala https://www.youtube.com/watch?v=xU5QmZp9Cmo</p>
<p>Day 32: Amygdala Guiding Question: What is fight or flight?</p>	<p>Strategies/Activity The bodies fight or flight reaction in the amygdala is common and biological way to prepare our body for action. It is important that we recognize and notice when our bodies are</p>	<p>Resources https://science.howstuffworks.com/life/inside-the-mind/emotions/fear2.htm https://www.youtube.com/watch?v=uxweRCXaLVA https://www.youtube.com/watch?v=JtSP7gJuRFE</p>

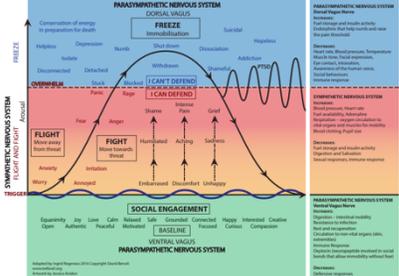
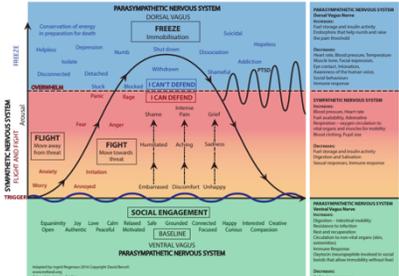
	having these symptoms and that we respond in a way that is helpful and not hurtful.	https://www.sfh-tr.nhs.uk/images/PIL3026_Fight_or_flight_and_relaxed_breathing.pdf
Day 33: Amygdala Guiding Question: What triggers your amygdala?	<u>Strategies/Activity</u> It is important to know your triggers and be aware of others triggers. When we are aware of what alerts our amygdala we can anticipate, plan ahead, and have more success responding when triggered in our environment. Complete the trigger survey with students over the next two days with a class share at the end of the activity.	<u>Resources</u> https://do2learn.com/activities/SocialSkills/Stress/IdentifyStressTriggers.pdf
Day 34: Amygdala Guiding Question: What triggers your amygdala?	<u>Strategies/Activity</u> Continue completing the survey from Day 24. Once each person has identified their Top 5 spend class time sharing out, finding similarities and common triggers, and allowing students to explain their own triggers. <u>To Do:</u> It can be helpful to post Top 5 lists in the classroom environment for accountability and reflection. Be sure to put these lists in a place for easy access during repair conversations.	<u>Resources</u> https://do2learn.com/activities/SocialSkills/Stress/IdentifyStressTriggers.pdf
Day 35: Triggers Guiding Question: What causes my brain to go on alarm alert? (shift from prefrontal cortex to amygdala)	<u>Strategies/Activity</u> Triggers, or hot buttons, are events or situations that cause irritation, irritability, anxiety, sadness, anger, ect. If we are aware of our triggers we can take action to avoid them in certain situations and/or anticipate when we might be triggered. If we bring this to our conscious mind, we can prepare and better respond rather than react in the emotional moment. <u>To Do:</u> Over the next several days, students and teacher will complete the Identifying Triggers at School Survey from resources. Chunk the survey into manageable pieces for appropriate	<u>Resources</u> https://do2learn.com/activities/SocialSkills/Stress/IdentifyStressTriggers.pdf

	age level. Younger students could complete independently as teacher reads questions aloud.	
Day 36: Triggers Guiding Question: What causes my brain to go on alarm alert? (shift from prefrontal cortex to amygdala)	Strategies/Activity Review: Triggers, or hot buttons, are events or situations that cause irritation, irritability, anxiety, sadness, anger, ect. If we are aware of our triggers we can take action to avoid them in certain situations and/or anticipate when we might be triggered. If we bring this to our conscious mind, we can prepare and better respond rather than react in the emotional moment. <u>To Do:</u> Over the next several days, students and teacher will complete the Identifying Triggers at School Survey from resources. Chunk the survey into manageable pieces for appropriate age level. Younger students could complete independently as teacher reads questions aloud.	Resources https://do2learn.com/activities/SocialSkills/Stress/IdentifyStressTriggers.pdf https://www.psychologytoday.com/us/blog/wander-woman/201507/5-steps-managing-your-emotional-triggers
Day 37: Triggers Guiding Question: What causes my brain to go on alarm alert? (shift from prefrontal cortex to amygdala)	Strategies/Activity Review: Triggers, or hot buttons, are events or situations that cause irritation, irritability, anxiety, sadness, anger, ect. If we are aware of our triggers we can take action to avoid them in certain situations and/or anticipate when we might be triggered. If we bring this to our conscious mind, we can prepare and better respond rather than react in the emotional moment. <u>To Do:</u> Over the next several days, students and teacher will complete the Identifying Triggers at School Survey from resources. Chunk the survey into manageable pieces for appropriate age level. Younger students could complete independently as teacher reads questions aloud.	Resources https://do2learn.com/activities/SocialSkills/Stress/IdentifyStressTriggers.pdf
Day 38: Triggers	Strategies/Activity Share in partners, small groups, or whole group top 5 trigger list. Do you see common themes arise from class feedback? How could the class	Resources https://do2learn.com/activities/SocialSkills/Stress/IdentifyStressTriggers.pdf

<p>Guiding Question: What are my top 5 triggers that I need to share with my learning community?</p>	<p>use this new learning to support essential agreements in the learning environment? <u>To Do:</u> Post and revisit top 5 lists as needed.</p>	<p>https://tinybuddha.com/blog/how-to-identify-your-emotional-triggers-what-to-do-about-them/</p>
<p>Day 39: Triggers Guiding Question: How can we shift from reactive responses to proactive responses when it comes to our emotional triggers?</p>	<p><u>Strategies/Activity</u> On this day we will review and post our emotional triggers and the regulation strategies we have explored to support positive emotional regulation.</p>	<p><u>Resources</u> Sharing Triggers Classroom Jobs Assign new roles and responsibilities in your classroom that help everyone to regulate their emotions and take responsibility for one another. Here are some choices.</p> <ul style="list-style-type: none"> • Kindness Keeper- notices and shares out kindness noticed • Gratitude Keeper- notices and shares out gratitude noticed • Inspirational Leader- finds and share inspiration • Mystery Motivator- provides encouragement anonymously • Resource Manager- looking up topics related to what we are studying and shares information • Feeling Tracker- to recognize when a classmate or another student is beginning to feel negative emotion suggesting we might need a focused attention practice • The Giver- what might this role be in your classroom?
<p>Day 40: The 90 Second Rule Guiding Question: What is the 90 Second Rule?</p>	<p><u>Strategies/Activity</u> What do you think this is? Let's write down our answers or guesses! ANSWER: Our brain can let go of negative emotion in 90 seconds. When a person has a reaction to something in their environment, there is a 90 second chemical process that happens in the body; after that, any remaining emotional response is just the person choosing to stay in that emotional loop.</p>	<p><u>Resources</u> Complete a focused attention practice: Place one arm under your opposite armpit the other arm hugging your shoulder. Sitting tall in this position, breath for 90 seconds. Notice: How do you feel after letting go of emotions?</p>

	<u>To Do:</u> Create an anchor chart for the 90 Second Rule.	
Day 41: The 90 Second Rule Guiding Question: How does the brain let go of negative emotion in 90 seconds?	<u>Strategies/Activity</u> When you have a negative reaction to something in the environment, you release adrenaline and cortisol. Your brain does not know the difference between you experiencing a negative event or you thinking the thought. The same release of chemicals takes place. Check out the first 3 minutes of Dr. Jill Bolte Taylor's Ted Talk.	<u>Resources</u> Dr. Jill Bolte Taylor- The 90 Second Rule https://www.youtube.com/watch?v=PzT_SBI31-s
Day 42: Negative Bias Guiding Question: Why is the brain negatively biased?	<u>Strategies/Activity</u> It is normal to feel negative emotion because our brains are wired to survive before we feel and think! And it is OK to go into survivor mode for short bits of time once in a while, but when our bodies are constantly going into that negative brain state, it becomes a hard wired habit! <u>To Do:</u> Above or Below the Line! - Draw your own line and let's monitor our brain state changes all day to see where they fall and how they change!!	<u>Resources</u> Negative Brain Bias https://www.youtube.com/watch?v=fLqzYDZAqCI&list=PLImZFIKE4ka8gRAVJUO-DzD0F9BXrzopz
Day 43: Senses and The Brain Guiding Question: How does the brain take in senses?	<u>Strategies/Activity</u> "We see the world not as it is, but as we are conditioned to see it." What are our senses and how do we use them each day? <u>To Do:</u> In one minute, draw or write down everything in this classroom you are taking in through sight, sound, touch, or smell! Share and compare your one-minute reflection. What are you conditioned to see?	<u>Resources</u> Sentis: Limitations of the Brain https://www.youtube.com/watch?v=9BdzhWdVaX0&index=3&list=PL53nCCeNj-RQDhbjE9LjvnFad-wdB5bw7 How Do We See? https://www.youtube.com/watch?v=Mbmt-6o-Bp0

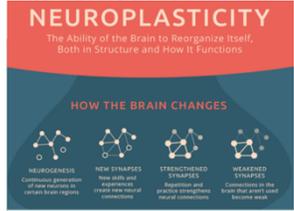
<p>Day 44: Senses and The Brain Guiding Question: What does the brain do with sensations?</p>	<p>Strategies/Activity The brain stem takes in the sensations from the world around you. Perception of these sensations helps in regulating or dis-regulating our brain state. Humans are intended to connect with one another, but before we can connect in relationships the brain stem must be regulated.</p>	<p>Resources The 3 Parts of the Brain https://www.youtube.com/watch?v=yQetOVB_VZo</p>
<p>Day 45: Senses and The Brain Guiding Question: How do sensations impact our perception of the environment we are living?</p>	<p>Strategies/Activity The brain can become overwhelmed by the amount of information there is to take in from the environment. Perception makes us aware of what is happening in our environment and attention helps focus in on what is important in the environment. <u>To Do:</u> What is your strongest sense? What is your weakest sense? Can you recall an emotion from one of your senses being triggered? Get with a partner to share and provide feedback. Discuss whole group.</p>	<p>Resources</p>
<p>Day 46: Senses and The Brain Guiding Question: What is stress?</p>	<p>Strategies/Activity Begin by discussing stress whole group. What is stress? Have students share their definition. How does your body feel when it is stressed? What sensations do you have? Explain to students that sometimes when we are feeling anxious, worried, angry, disgusted, or sad, we cannot always know exactly where we feel these emotions or even explain them! Sensations are physical feelings and these we can name! Naming the sensation allows us to acknowledge the stress we are feeling. Here are some examples: tired, tense, itchy, cold, icy, tingly, full, numb, frozen, flowing, goose-</p>	<p>Resources</p> <p>What we can name, we can tame. What is sharable is bearable!</p>  <p>POSITIVE Brief increases in heart rate, mild elevations in stress hormone levels.</p> <p>TOLERABLE Serious, temporary stress responses, buffered by supportive relationships.</p> <p>TOXIC Prolonged activation of stress response systems in the absence of protective relationships.</p>

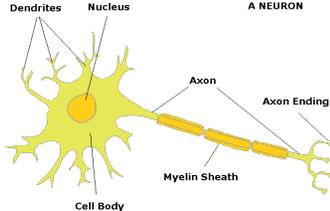
	<p>bumpy, butterflies, suffocating, closed, etc. What other sensations can you think of?</p>	
<p>Day 47: Senses and The Brain Guiding Question: What is the stress response system?</p>	<p>Strategies/Activity Our bodies have a stress response system that is supposed to take care of us under times of stress but sometimes it goes on overload and keeps pumping out stress hormones. The stress response system is the fundamental reorganization of how the brain manages perception. We have built in attachment programs that motivate us to seek out positive bonds with caring adults. A healthy stress response system supports cognitive flexibility, imagination, and empathy. Let's watch!</p>	<p>Resources How Stress Effects the Body https://www.youtube.com/watch?v=WuyPuH9ojCE</p> <p>Breathing and moving help us to relieve the stress and this is why we are learning about focused attention practices!</p> 
<p>Day 48: Senses and The Brain Guiding Question: What is the stress response system?</p>	<p>Strategies/Activity Our bodies have a stress response system that is supposed to take care of us under times of stress but sometimes it goes on overload and keeps pumping out stress hormones. The stress response system is the fundamental reorganization of how the brain manages perception. We have built in attachment programs that motivate us to seek out positive bonds with caring adults. A healthy stress response system supports cognitive flexibility, imagination, and empathy. Let's watch!</p>	<p>Resources Managing Stress https://www.youtube.com/watch?v=hnpQrMqDoqE</p> <p>Breathing and Moving help us to relieve the stress and this is why we are learning about focused attention practices!</p> 
<p>Day 49: Senses and The Brain</p>	<p>Strategies/Activity Regulation occurs in the brain stem and it is not something we are born with. We learn to</p>	<p>Resources Japanese method of relieving stress/ thumb hold anxiety, first finger holds fear, middle finger holds anger, ring finger holds sadness, and pinky finger</p>

<p>Guiding Question: How can we support a healthy stress response system?</p>	<p>regulate through experiences with others. We model how to regulate and we support regulation through emotional contagion when we feel regulated (calm). Discuss and share whole group what regulates (calms) you. It can be helpful to identify a regulating activity when calm to help support emotional regulation when triggered.</p>	<p>holds optimism and our self-esteem. As we listen to soft instrumental music (60-80 beats per minute) while holding each finger for 30 seconds to one minute, we dampen the stress response!</p> <p>Resources Music for relaxation, studying and dampening the stress response. https://www.youtube.com/watch?v=pmoGdaOeUkQ&list=PL3K4bu5ml6giU39ifLp_Z6Ope9dqVBqt</p>
<p>Day 50: Senses and The Brain Guiding Question: What does it mean to regulate?</p>	<p>Strategies/Activity It can be helpful to identify a regulating activity when calm to help support emotional regulation when triggered. The next couple of days, we will spend time in regulation stations discovering what feels good. We will spend time reflecting after each station; sharing how these activities make your body and mind feel.</p> <p>Spend 3-4 minutes participating in the activity and then 1-2 minutes reflecting and sharing out noticings.</p> <p>Other Regulation Station ideas: word search, coloring, puzzle, stacking cups, take a walk, stationary bicycle, yoga, Legos, and more!</p>	<p>Resources Regulation Stations</p> <ul style="list-style-type: none"> • Taking deep breaths brings an oxygenated glucose blood flow to our frontal lobes. Taking just three deep inhales and exhales calms the emotional brain. • Movement is critical to learning, as it activates several areas of the brain at once while calming the brain. Clap out rhythms and have students repeat. The collective sound brings a sense of community to the classroom.
<p>Day 51: Senses and The Brain Guiding Question: What does it mean to regulate?</p>	<p>Strategies/Activity It can be helpful to identify a regulating activity when calm to help support emotional regulation when triggered. The next couple of days, we will spend time in regulation stations discovering what feels good. We will spend time reflecting after each station; sharing how these activities make your body and mind feel.</p> <p>Spend 3-4 minutes participating in the activity and then 1-2 minutes reflecting and sharing out noticings.</p>	<p>Resources Regulation Stations</p> <ul style="list-style-type: none"> • Pass out a drop of lotion, and for 90 seconds students give their hands and fingers a massage, noticing their palms, fingertips, and any sensations that feel uncomfortable or stiff. • Ask students to rock along their spine to help them feel present in their bodies. This provides a soothing rhythm that subtly grounds them with sensation and movement.

<p>Day 52: Senses and The Brain Guiding Question: What does it mean to regulate?</p>	<p>Strategies/Activity It can be helpful to identify a regulating activity when calm to help support emotional regulation when triggered. The next couple of days, we will spend time in regulation stations discovering what feels good. We will spend time reflecting after each station; sharing how these activities make your body and mind feel.</p> <p>Spend 3-4 minutes participating in the activity and then 1-2 minutes reflecting and sharing out noticings.</p>	<p>Resources Regulation Stations</p> <ul style="list-style-type: none"> Placing our fingers on our throats, we begin the day with a sound or class chant and feel the vibration of our vocal cords. This gives everyone a chance to participate and to see how we can mimic different animals, instruments, and random classroom sounds such as papers crinkling. The students sit with their legs straight out and begin wiggling their toes and ankles, shaking knees and thighs, rotating shoulders, arms, and finally their heads, keeping all body parts moving at the same time. Then we reverse the process and stop our heads, arms, shoulders, and on down. This gives children a great body scan and a sequence for working memory.
<p>Day 53: Senses and The Brain Guiding Question: What does it mean to regulate?</p>	<p>Strategies/Activity It can be helpful to identify a regulating activity when calm to help support emotional regulation when triggered. The next couple of days, we will spend time in regulation stations discovering what feels good. We will spend time reflecting after each station; sharing how these activities make your body and mind feel.</p> <p>Spend 3-4 minutes participating in the activity and then 1-2 minutes reflecting and sharing out noticings.</p>	<p>Resources Regulation Stations</p> <ul style="list-style-type: none"> Sometimes I'll put on music and give the students old scarves, and we'll dance around the room waving the scarves and feeling the soft sensation as we dance and pass by one another. When the music stops, we freeze and notice our postures and movements. This strategy can be led by the teacher or a student to see if we can mimic a movement or create our own. Listen to calming music (60 beats per minute)
<p>Day 54: Brain Intervals Guiding Question: What is a brain interval?</p>	<p>Strategies/Activity The purpose of a brain interval is to stimulate the reticular activating stem located in the brain stem. When we begin to lose attention, no learning can occur. The brain intervals bring novelty and curiosity and a brief state of confusion. This is healthy for activation while learning in robotic ways can lull the brain to sleep! Our brains need an interval of time, to soak in</p>	<p>Resources https://www.edutopia.org/blog/brain-breaks-focused-attention-practices-lori-desautels https://www.youtube.com/watch?v=QCnfAzAlhVw https://www.youtube.com/watch?v=T2zjIB4ctu4</p>

	new information and this is also why brain intervals are so important to learning!!	
Day 55: Brain Intervals Guiding Question: What is a brain interval?	Strategies/Activity A brain interval is a quick opportunity to change up our predictable routines of receiving incoming information. To Do: Notice. Notice who is participating and providing feedback and connect with those students who need support.	Resources http://www.greatexpectations.org/brain-breaks https://www.pinterest.com/parko/brain-break-activities/ http://minds-in-bloom.com/20-three-minute-brain-breaks/
Day 56: Brain Intervals Guiding Question: What are the benefits of brain intervals?	Strategies/Activity Use brain intervals to stimulate the brain stem and bring focus and alertness back to the conscious mind. Brain intervals give students the chance to develop and apply social competence. A brain break allows students to rest and recharge, while simultaneously learning to cooperate, communicate, and compromise. Frequent breaks boost attentiveness in class and maximize learning.	Resources http://fsnep.ucdavis.edu/trainings/town-halls/townhalls/copy2_of_14activitybreaks_000.pdf http://www.squiglyplayhouse.com/BrainTeasers/ https://www.youtube.com/watch?v=FoypZyibQro&feature=youtu.be
Day 57: Brain Intervals Guiding Question: How are brain intervals impacting me?	Strategies/Activity To Do: Create an anchor chart displaying different brain intervals as you try each one. Remember, brain intervals should be a familiar activity, but not scheduled. Brain intervals should be used as needed and novel.	Resources Take time each day at this stage to reflect on how the body and mind feels before, during and after brain intervals. Notice as students return to work focus, alertness and time on task.
Day 58: Brain Intervals Guiding Question: When is a good time to regulate and provide myself with	Strategies/Activity Incorporate brain intervals into your daily schedule. Remember the rule: Age + 2= Get Up & Move	Resources https://funandfunction.com/blog/wp-content/uploads/2014/10/Activity_Guide_web.pdf http://www.learningstationmusic.com/blog/2015/05/09/from-your-seat-brain-breaks/ https://sharpbrains.com/resources/1-brain-fitness-fundamentals/brain-functions-perception-attention-memory-and-more/

independent brain intervals?		
Day 59: Neuroplasticity Guiding Question: What is neuroplasticity?	Strategies/Activity Neuroplasticity is the brains ability to reorganize itself by forming new neural connections through experiences. Students spend an average of 1000 hours a year at school. As teachers, we know behaviors are hard-wired, but we also know that because of neuroplasticity and the important role school plays in young people’s lives, we are able to share knowledge with students to change thinking.	Resources Sentis: Neuroplasticity https://www.youtube.com/watch?v=ELpfYCZa87g 
Day 60: Neuroplasticity Guiding Question: What is neuroplasticity?	Strategies/Activity Need an example of a brain rewired? Take a look at the Backwards Brain Bicycle and then reflect and share as a whole group. What habits are helping and/or hurting you? To Do: Choose a habit (personally or within school) you are going to try to rewire for a week. Track those new neural pathways.	Resources Backwards Brain Bicycle https://www.youtube.com/watch?v=MFzDaBzBIL0
Day 61: Neuroplasticity Guiding Question: What circuits are you firing and wiring?	Strategies/Activity Watch video from resources and discuss circuits in your brain that are strong and connected. These strong circuits are your habits (neurons that are firing and wiring together) To Do: Discuss with a partner something you do well? Discuss a challenge for you or something you would like to get better at!	Resources Stacking Cups with Austin https://www.youtube.com/watch?v=-nhRPVWM9A0
Day 62: Neuroplasticity Guiding Question: What is a neuron?	Strategies/Activity A neuron is cell in the brain that receives information and passes it along. A single neuron is useless; as it requires millions of neurons to transmit information. When neurons receive and send messages they transmit	Resources What is a neuron? https://www.youtube.com/watch?v=6qS83wD29PY Neuron Models http://faculty.washington.edu/chudler/chmodel.html

	<p>electrical impulses across the synaptic gap. The human brain has 86 BILLION neurons.</p>	<p>Secondary https://www.youtube.com/watch?v=HZh0A-lWSmY</p> <p>Elementary Structure of a Neuron https://www.youtube.com/watch?v=HZh0A-lWSmY</p> <p>Neuron Song https://www.youtube.com/watch?v=NzjM1jo_8AU</p> <p>Neurons for Everyone! https://www.youtube.com/watch?v=HZh0A-lWSmY https://www.youtube.com/watch?v=DLN1UsvmVvM https://www.youtube.com/watch?v=UDpydfpEads</p>
<p>Day 63: Neuroplasticity Guiding Question: How do neurons work?</p>	<p>Strategies/Activity We will play a game today and connect neurons to what we know about telephones.</p>	<p>Resources Game: Chain Reaction: What is the connection to neurons? https://originsonline.org/educator-help/chain-reaction</p>
<p>Day 64: Neuroplasticity Guiding Question: What is a neuron?</p>	<p>Strategies/Activity One neuron by itself means nothing. It takes hundreds of thousands of neurons connecting just to remember your name! Open with this video and discuss after stopping and starting at different points or give students certain terms and definitions to listen to as they capture the answer as they listen!</p> <p>To Do: Make candy models of neurons with licorice, M&M's, and different candies that resemble the cell body, dendrites, and axons!</p>	<p>Resources https://www.youtube.com/watch?v=UDpydfpEads</p>  <p>A diagram of a single neuron. The cell body (soma) is a yellowish, rounded structure containing a central nucleus. Branching out from the cell body are several dendrites. A long axon extends from the cell body, covered by a yellow myelin sheath. The axon ends in several axon endings.</p>

<p>Day 65: Neuroplasticity Guiding Question: What are synapses, dendrites and axons?</p>	<p>Strategies/Activity A synapse is a chemical message sent between two neurons connecting them to one another (like when we send a Snap Chat). After watching the video, create a human synapses. Create a circuit as we link hands and arms mimicking an axon and dendrite. As we link arms and then hands, squeeze the person's hand next to you indicating a signal has passed.</p>	<p>Resources Synapses https://www.youtube.com/watch?v=LT3VKA4roo https://www.youtube.com/watch?v=g7FdMi03CzI https://www.youtube.com/watch?v=WhowH0kb7n0</p>
<p>Day 66: Neuroplasticity Guiding Question: What am I choosing to rewire?</p>	<p>Strategies/Activity Today is a day for neuroplasticity reflection. A week ago you chose a habit (personally or from within school) and tried to rewire for a week. How did you do? What did you notice? Was it difficult? Did it get easier? What are your plans moving forward? Can you think of other behaviors that could benefit from some rewiring?</p>	<p>Resources</p>
<p>Day 67: Neuroplasticity Guiding Question: What does neuroplasticity look like in the brain?</p>	<p>Strategies/Activity Break the word neuro-plasticity apart. What does neuro mean? (brain) What does plastic mean? (malleable or able to change) What does neuroplasticity mean? This activity demonstrates that repetition and practice create a fast circuit of connection and the more we do anything the better we become!</p>	<p>Resources Circuit Ball Toss Activity: Circuit Ball Toss Form a circle and choose a leader who will begin and end the ball toss. That leader, often the teacher, will time the circuit from start to finish. There is one rule! You must remember the person who you throw the ball to in the circuit. Before starting, all participants stick both hands straight out in front of the body (to show they have not received the ball). After you have received the ball and thrown it, you place your hands behind your back. The circuit is complete when the ball is tossed back to the leader who started the circuit. Round 1: What did you notice about our circuit? Was it efficient? Why or why not? Complete the circuit following the same circuit two more times noticing time changes and other aspects making the circuit more efficient. This activity demonstrates that repetition and practice create a fast circuit of connection and the more we do anything the better we become!</p>

<p>Day 68: Adolescent Brain Guiding Question: How is the adolescent brain unique?</p>	<p><u>Strategies/Activity</u> The greatest stage of brain development occurs in the last trimester throughout two years of age. Adolescence is an important time in brain development because it is the second greatest time of brain development. What is happening in the adolescent brain during this time?</p> <ul style="list-style-type: none"> • Natural pruning of neurons • Increasing mastery skills • Less serotonin and more testosterone • Heightened dopamine • Hyperrationality 	<p><u>Resources</u> Brain Development in Teenagers (4th- 12th) https://www.youtube.com/watch?v=dISmdb5zfiQ</p> <p>Teen Brain https://www.youtube.com/watch?v=EGdlpaWi3rc</p>
<p>Day 69: Adolescent Brain Guiding Question: How is the adolescent brain unique?</p>	<p><u>Strategies/Activity</u> What wires together fires together.</p>	<p><u>Resources</u> The Teenage Brain Explained https://www.youtube.com/watch?v=hiduiTq1ei8</p> <p>The Teenage Brain https://www.youtube.com/watch?v=aIqVvyHeSiY</p> <p>The Neuroanatomical Transformation of the Teenage Brain https://www.youtube.com/results?search_query=90+second+rule+jill+bolte+taylor</p>
<p>Day 70: Adolescent Brain Guiding Question: What is happening in the adolescent brain?</p>	<p><u>Strategies/Activity</u> Watch clip from <i>Inside Out</i> and take notes whole group or individually. Use notes from viewing to support tomorrow's class discussion. Use the Edutopia article from resources to support whole group discussion.</p>	<p><u>Resources</u> The Adolescent Brain: Leaving Childhood Behind https://www.edutopia.org/blog/adolescent-brain-leaving-childhood-behind-lori-desautels</p> <p>Video clips of Bing Bong and the Adolescent Brain https://www.youtube.com/watch?v=tXj61BXEy2M</p>
<p>Day 71:</p>	<p><u>Strategies/Activity</u></p>	<p><u>Resources</u> Video clips of Bing Bong and the Adolescent Brain</p>

<p>Adolescent Brain Guiding Question: What is happening in the adolescent brain?</p>	<p>Yesterday we watched a clip from <i>Inside Out</i>. Today we are going to share our reflections and uncover the symbolism from this scene in the movie.</p> <ul style="list-style-type: none"> • What or who was your Bing Bong? Could it be an object (like a blanket or teddy bear) or something abstract? • What does Bing Bong symbolize? • Why is it important for Riley to let go of Bing Bong? • Why did Bing Bong jump off the wagon? • What makes it so <i>sad</i> for the audience (especially parents and adults) as we watch this part? • Do we really ever lose Bing Bong? Explain. • Do you have a core memory of an experience from your imagination? What is it like? 	<p>https://www.youtube.com/watch?v=tXj61BXEy2M</p>
<p>Day 72: Core Memories Guiding Question: What is a core memory?</p>	<p><u>Strategies/Activity</u> What is the difference between a core memory and a regular memory? A core memory is a memory that holds significant emotion or meaning to the individual. Memory Games</p> <ol style="list-style-type: none"> 1. Bring out ten items on a tray and show students for 10 seconds. See what students remember? 2. Put a short sequence and then build a longer sequence of numbers and letters together! <p>What strengthens memory?</p>	<p><u>Resources</u> Your Memory Under Stress https://www.youtube.com/watch?v=FKzUSfzqh5A</p>
<p>Day 73: Core Memories Guiding Question: What is a core memory?</p>	<p><u>Strategies/Activity</u> A core memory is a memory that holds significant emotion or meaning to the individual. Share one of each and list the details of each memory! Which memory has more</p>	<p><u>Resources</u> Hippocampus and Memory https://www.youtube.com/watch?v=eu_zOYHeGrg</p>

	details? Can you write down the different details?	
Day 74: Core Memories Guiding Question: How does positivity impact the brain?	Strategies/Activity Your brain state matters and when you believe you can, you are actually more likely to be successful. Go ahead spread positive vibes!	Resources The Power of Positivity https://www.youtube.com/watch?v=kO1kgl0p-Hw
Day 75: Core Memories Guiding Question: Can happiness spread?	Strategies/Activity Spreading gratitude will increase your happiness. Try it out.	Resources The Science of Happiness https://www.youtube.com/watch?v=oHv6vTKD6lg&t=17s *Quiet from 5:15-5:30 for language edit.
Day 76: Short Term Memory Guiding Question: What is short term memory?	Strategies/Activity Short term memory is the phase of memory responsible for temporary storage of information.	Resources How Does Your Memory Work? https://www.youtube.com/watch?v=TUoJc0NPajQ
Day 77: Long Term Memory Guiding Question: What is long term memory?	Strategies/Activity Long term memory is the phase of memory responsible for the storage of information for an extended period of time.	Resources How Does Your Memory Work? https://www.youtube.com/watch?v=TUoJc0NPajQ Short Term, Long Term, and Working Memory https://www.youtube.com/watch?v=iPEog8Wd8po
Day 78: Memory Guiding Question:	Strategies/Activity Your brain is taking in millions of signals all day. It is not possible to remember everything. The brain must do something with a memory to	Resources Short Term vs. Long Term Memory https://www.youtube.com/watch?v=b9aEeLGjR6M

<p>How are short term and long term memory different?</p>	<p>store it in long term and make it easy to retrieve from memory.</p>	
<p>Day 79: Memory Guiding Question: How does learning become memory? (encoding, consolidation, retrieval)</p>	<p>Strategies/Activity Memory is learning that has persisted over time.</p>	<p>Resources How We Make Memories https://www.youtube.com/watch?v=bSycdIx-C48&t=510s</p>
<p>Day 80: Memory Guiding Question: How are you priming your brain for memory storage?</p>	<p>Strategies/Activity What daily habits do you have that are helping you come to school ready to learn and socialize? (sleep, diet, exercise, mindfulness, planning ahead, schedule). Discuss whole group strategies for taking care of our body and brain to help support memory.</p>	<p>Resources How We Make Memories https://www.youtube.com/watch?v=bSycdIx-C48&t=510s</p>
<p>Day 81: Gratitude Guiding Question: How does gratitude effect the brain?</p>	<p>Strategies/Activity Create gratitude journals as we write three things we are grateful for in our morning meeting. We will then each take five notecards and write a positive affirmation on these and share them throughout the day with other staff, students, and teachers!</p>	<p>Resources Gratitude https://www.youtube.com/watch?v=aT-r3-I6eY0 How Gratitude makes us happy? https://www.youtube.com/watch?v=U5IZBjWDR_c Kid President https://www.youtube.com/watch?v=yA5Opt1JRE4</p>

<p>Day 82: Our Train of Thought Guiding Question: When do your thoughts become distracted and how do you get back on track?</p>	<p>Strategies/Activity Lead discussion and have students discuss in small groups. When does your train of thought run smoothly with few stops? When does your train of thought struggle? Why? What can I do in the classroom to help your train run with great speed and accuracy? What can you do to help your train of thought stay on track and reach its destination? Teaching students about their neuroanatomy is empowering, as well as the foundation of learning and connection.</p>	<p>Resources Islands of Personality and Trains of Thought https://www.edutopia.org/blog/islands-of-personality-trains-of-thought-lori-desautels</p> <p>Strategies <u>Elementary</u> It is important to have a tangible train of thought in the classroom. This could be a larger model of chairs and cardboard boxes, or students could build individual models of trains. Images of trains posted in an Attention and Focus corner could help to prime the brain for focus and remembering.</p> <p><u>Secondary</u> Creating an analogy or visualization of the train of thought could support goal setting and planning. Where is your train heading right now? Is this where you want to go? What are two changes in planning this journey that you could make today?</p>
<p>Day 83: Emotional Regulation Guiding Question: How do we return to our prefrontal cortex (calm) after being triggered (amygdala)?</p>	<p>Strategies/Activity When we are angry, anxious, upset in any way, our prefrontal cortex shuts down and it can be hard for us to think clearly and/or rationally. Because of this it is difficult to pause and think before we react. Can you think of a recent time when you felt this way and unintentionally spoke or acted before thinking about the consequence? We learn to pause and regulate at a very young age. If we do not learn to regulate at a young age, it is much more difficult to learn the more we age. Spend time over the next two days to watch videos with students! Discuss our coping strategies again and if we are intentionally using these strategies to emotionally regulate.</p>	<p>Resources Pause Young people with ADD often show an inability to create a pause, or a moment of self-restraint between stimulus and reaction while weighing the consequences of their impending reaction. To assist students in creating this pause, give their brains the opportunity to make associations with color, visuals, and concrete objects. Tangible items can be symbolic reminders for students of all ages. Here are examples of signaling an intentional pause:</p> <ul style="list-style-type: none"> • Flicking a red rubber band bracelet on our wrists or placing a red ball cap on our heads are two practices that teachers could model and repeatedly share when a pause is needed before making a hurried emotional or academic decision. • Accompanied with a tangible item, teachers can help students identify words that are analogies to waiting and hesitating. Stop, pause, halt, think, rest, breathe, float, and tread could be posted in specific areas of the room with pictures and images to add meaning.

		<ul style="list-style-type: none"> Students could bring in an object from home that reminds them to stop, pause, and wait. These personal objects could be placed in a “red corner,” a highlighted area in the classroom where they are seen as reminders. Seeing, saying, and experiencing meaningful and personal reminders can effectively create associations and metaphors that the brain desires and needs for personalizing new responses. <p>The strategies in this section originally appeared on Edutopia in the article: Strengthening Executive Function Development for Students With ADD https://www.edutopia.org/blog/executive-function-development-students-add-lori-desautels</p> <p>22PresenceLearning © 2017. All Rights Reserved. https://www.youtube.com/watch?v=m4UGDaCgo_s https://www.youtube.com/watch?v=Zs559guIGDo https://www.youtube.com/watch?v=pFkRbUKy19g</p>
<p>Day 84: Emotional Regulation Guiding Question: How do we return to our prefrontal cortex (calm) after being triggered (amygdala)?</p>	<p>Strategies/Activity When we are angry, anxious, upset in any way, our prefrontal cortex shuts down and it can be hard for us to think clearly and/or rationally. Because of this it is difficult to pause and think before we react. Can you think of a recent time when you felt this way and unintentionally spoke or acted before thinking about the consequence? We learn to pause and regulate at a very young age. If we do not learn to regulate at a young age, it is much more difficult to learn the more we age. Spend time over the next two days to watch videos with students! Discuss our coping strategies again and if we are intentionally using these strategies to emotionally regulate.</p>	<p>Resources Self Regulation Skills https://www.youtube.com/watch?v=m4UGDaCgo_s</p> <p>Controlling Emotions: A Lesson From Angry Birds https://www.youtube.com/watch?v=pFkRbUKy19g</p>

<p>Day 85: Emotional Regulation Guiding Question: How do we return to our prefrontal cortex (calm) after being triggered (amygdala)?</p>	<p>Strategies/Activity The language of the prefrontal cortex is spoken words and the language of the amygdala is feelings. When we are angry, anxious, afraid, sad, hungry, or upset in any way the prefrontal cortex goes offline and we need time to regulate in a safe space to calm the amygdala. We must be proactive in building relationships so we may support co-regulation in times when students become dis-regulated.</p>	<p>Resources Calm Down and Release the Amygdala https://www.youtube.com/watch?v=Zs559guIGDo</p>
<p>Day 86: Coping Strategy: Emotional Freedom Technique-“Tapping” Guiding Question: What is emotional freedom technique and what happens in the brain when we use this calming strategy?</p>	<p>Strategies/Activity “Emotional Freedom Techniques, or EFT (often known as Tapping or EFT Tapping), is a universal healing tool that can provide impressive results for physical, emotional, and performance issues. EFT operates on the premise that no matter what part of your life needs improvement, there are unresolved emotional issues in the way. Even for physical issues, chronic pain, or diagnosed conditions, it is common knowledge that any kind of emotional stress can impede the natural healing potential of the human body.” Familiarize yourself and students with nine tapping points on the body.</p>	<p>Resources https://www.emofree.com/eft-tutorial/tapping-basics/what-is-eft.html https://www.thrivingnow.com/tapping-points-and-instructions/</p> <p>Teachers https://www.youtube.com/watch?v=dPqQGsYFsX4 https://www.youtube.com/watch?v=s99M8eJV4sk https://www.youtube.com/watch?v=uWx_e199k88</p>
<p>Day 87: Coping Strategy: Emotional Freedom Technique-“Tapping” Guiding Question: How EFT impacts our emotions and learning?</p>	<p>Strategies/Activity Use these videos and the resources from the previous day to review and practice EFT practices.</p>	<p>Resources Elementary https://www.youtube.com/watch?v=S1efrIBI9BY</p> <p>Secondary https://www.youtube.com/watch?v=xtjHUoXYojE</p>

<p>Day 88: Social Brains Guiding Question: Why are relationships important?</p>	<p>Strategies/Activity We cannot live without one another! We are wired for relationship and do not function well without one another. Make a list of everything you can do independently...without anyone. Make a list of everything you do each day that involves other people. Which list brings you the most positive emotions?</p>	<p>Resources</p>
<p>Day 89: Social Brains Guiding Question: Why are relationships important?</p>	<p>Strategies/Activity We discussed the important role relationships play in our daily lives. Watch the video <i>Social Brains</i> and discuss new takeaways and connect to your lists from yesterday.</p>	<p>Resources Social Brains https://www.youtube.com/watch?v=J0XmZW6xYSg</p>
<p>Day 90: Social Brains Guiding Question How is technology changing your brain?</p>	<p>Strategies/Activity Technology plays a large role in many of our lives. Are you aware of how technology is changing your brain (good and bad) each day?</p>	<p>Resources From Neurons to Networks! https://www.youtube.com/watch?v=zLp-edwiGUU</p>
<p>Day 91: Social Brains Guiding Question: In what ways are groups stronger than individuals?</p>	<p>Strategies /Activity Bring in a thick book like a telephone book! Show how easy it is to tear one page and then grab 50 or 100 pages together and try to tear these! If you have enough pages, they simply will not tear! We are stronger in a group and with collaboration! Why do we sometimes not get along in groups? Could it be that our survival brain is kicking into action? How could we work to collaborate in better ways, working like a thick book that's pages cannot be torn when working together?</p>	<p>Resources Phone Book</p>

<p>Day 92: Social Brains Guiding Question: What are your superpowers?</p>	<p>Strategies /Activity “Neuroscientist Matthew Lieberman explains that through his studies he's learned that our kryptonite is ignoring the importance of our social superpowers and by building on our social intuition, we can make ourselves smarter, happier, and more productive. In this TEDx Talk, Lieberman explores groundbreaking research in social neuroscience that reveals that our need to connect with other people is even more fundamental than our need for food or shelter and that the social pain and pleasure we experience has just as much impact as physical pain and pleasure.”</p>	<p>Resources The Social Brain and Its Superpowers; Matthew Lieberman, Ph.D. https://www.youtube.com/watch?v=NNhk3owF7RQ</p>
<p>Day 93: Social Brains Guiding Question: What are your superpowers?</p>	<p>Strategies /Activity Continue watching video and then share reflection in whole group discussion.</p>	<p>Resources The Social Brain and Its Superpowers; Matthew Lieberman, Ph.D. https://www.youtube.com/watch?v=NNhk3owF7RQ</p>
<p>Day 94: Empathy Guiding Question: How can we increase our empathy?</p>	<p>Strategies/Activity Do you ever feel like you should help someone but you don't when you are in a group of people? Watch this and think of a time when we did or did not!! Can animals teach us empathy? Can animals pick up on our emotions?</p>	<p>Resources All Students https://www.youtube.com/watch?v=UzPMMSKfKZQ Teaching Empathy https://www.youtube.com/watch?v=aU3QfyqvHk8</p>
<p>Day 95: Empathy Guiding Question: How can we increase our empathy?</p>	<p>Strategies/Activity Empathy is the ability to understand and share the feelings of another. Empathy is a learned trait and must be taught.</p>	<p>Resources Elementary https://www.youtube.com/watch?v=9_1Rt1R4xbM Secondary The Bystander Effect https://www.youtube.com/watch?v=Wy6eUTLzcU4 The Empathy Gap https://www.youtube.com/watch?v=bdLOkqMfRjk</p>

<p>Day 96: Engagement Guiding Question: How do we keep our brain engaged?</p>	<p>Strategies/Activity Have you ever been driving for a long time, and then you realize that several minutes have passed, and you don't remember thinking about driving because you were in such a relaxed state of alertness? That's not how we want our brain to feel at school! We want to keep our brain engaged so our best learning can occur. We need novelty, curiosity, and sometimes even a brief state of confusion because the brain pays close attention to these types of experiences. This is because of our reticular activating system (RAS) in our brain stem.</p>	<p>Resources Reticular Activating System https://www.youtube.com/watch?v=QCnfAzAIhVw&t=90s Unlocking The Screen of Your Mind https://www.youtube.com/watch?v=xsrkOSTyWCU</p>
<p>Day 97: Multiple Intelligence Guiding Question: What are multiple intelligences?</p>	<p>Strategies/Activity The question we need to begin asking ourselves and our students is: "How are you smart?" Not... "How smart are you?"</p>	<p>Resources What is Multiple Intelligence? https://www.youtube.com/watch?v=s2EdujrM0vA Multiple Intelligence https://www.youtube.com/watch?v=cf6lqfNTmaM https://www.youtube.com/watch?v=falHoOEUFz0</p>
<p>Day 98: Multiple Intelligence Guiding Question: What are multiple intelligences?</p>	<p>Strategies/Activity There are many ways of being smart. How are you smart? You were born to learn, so then what are you learning?</p>	<p>Resources Multiple Intelligence https://www.youtube.com/watch?v=cf6lqfNTmaM Born to Learn https://www.youtube.com/watch?v=falHoOEUFz0</p>
<p>Day 99: Multiple Intelligences Guiding Question: What are your learning strengths and challenges?</p>	<p>Strategies/Activity Let's look at our own intelligences! Spend the next couple of days digging into strengths and reflecting.</p>	<p>Resources Multiple Intelligences Self Assessment https://www.edutopia.org/multiple-intelligences-assessment Find Your Strengths http://literacynet.org/mi/assessment/findyourstrengths.html Secondary- Multiple Intelligences Inventory</p>

		<p>http://kerstens.org/alicia/planning10/Multiple%20Intelligences%20Inventory.pdf</p> <p>Matching careers to multiple intelligences http://bestcareermatch.com/career-chart</p> <p>Thomas Armstrong- Choosing a Career https://www.teachervision.com/using-multiple-intelligences-theory-choosing-career</p>
<p>Day 100 Applied Educational Neuroscience Guiding Question: What have you learned and how will you use this learning going forward?</p>	<p>Strategies/Activity So What...Now What? Looking back on what has been covered in these lessons what do you now know about the brain? Maya Angelou is quoted with saying, “When you know better, you do better.” How does knowing about your neuroanatomy and the amazing functions of your brain change the way you look at the future? Reflect in groups, write, draw...How will you apply this knowledge moving forward?</p>	<p>Resources</p>
<p>Additional Resources:</p>		<p>http://faculty.washington.edu/chudler/links.html</p> <p>https://www.parentingforbrain.com/self-regulation-toddler-temper-tantrums/</p> <p>https://www.pinterest.com/explore/brain-games/?lp=true</p> <p>https://www.youtube.com/watch?v=hVy5E2DZkKM&list=PLQwg0PxpUPloVUzf175OuwJTPjCgn8jzM</p> <p>https://www.youtube.com/watch?v=cgLYkV689s4</p> <p>https://thecornerstoneforteachers.com/working-memory-games/</p> <p>http://soulpancake.com/</p> <p>22PresenceLearning © 2017. All Rights Reserved.</p>

"Inside Out" Lesson Plans

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adapted from Dr. Lori Desautels' "Inside Out" Curriculum

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Overview

Dear Indiana Colleagues,

While making these lesson plans, our main goal was to capture the essence of each article written by Dr. Lori in her "Inside Out" Curriculum and make it accessible through our Indiana Standards for all grades, and for all classrooms in Indiana. You will see that each topic has two lesson plans in each section, one for Elementary Students (K-6) and one designed for Secondary students (Grades 7-12).

As teachers, you know that lesson plans can never be a one-size-fits-all approach. Keeping that in mind, we tried to leave room to implement classroom traditions and modifications based on your students, while still trying to give enough guidance that you would be able to follow the lesson plan with only having the knowledge that this packet brings.

After the Standards page you will find a "Cheat Sheet" for these lessons. Please know that this is not an exhaustive list of terms, and that the concepts presented here are an extremely simplified version of neuroscience for our purposes in teaching kids about the applicable functions of their brain as it relates to learning and connecting with others.

We hope that these lessons and resources help you to start the conversation of how our brains work with your students. We are in a critical time of learning how to function in this traumatized society, and it starts with education: it starts with us.

Please feel free to contact either of us at SMidura@IUHealth.org or MIDaniels@avon-schools.org with any questions about these lessons or resources. We look forward to connecting with you.

Standards

"Creating Core Memories"

Elementary: 1.RV.3.1 Identify words and phrases in stories, poems, or songs that suggest feelings or appeal to the senses (touch, hearing, sight, taste, smell).

6.RL.3.2: Explain how an author develops the point of view of the narrator or speaker in a work of literature, and how the narrator or speaker impacts the mood, tone, and meaning of a text.

(Health & Wellness)

2.1.2 Recognize that there are multiple dimensions of health. (emotional, intellectual, physical, and social health)

5.1.2 Identify examples of emotional, intellectual, physical, and social health

Secondary: 9-10.SL.2.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly and persuasively.

(Health & Wellness)

8.1.2 Describe the interrelationships of emotional, intellectual, physical, and social health in adolescence.

12.1.2 Cite evidence that demonstrates the interrelationships of emotional, intellectual, physical, and social health across the lifespan.

"Islands of Personality"

Elementary: (Health & Wellness)

2.1.2 Recognize that there are multiple dimensions of health. (emotional, intellectual, physical, and social health)

3.RN.2.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.

Secondary: 9-10.SL.2.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly and persuasively.

9-10.SL.4.1 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

11-12.RN.2.2 Compare and contrast the development of similar central ideas across two or more texts and analyze how they emerge and are shaped and refined by specific details.

"How Emotions Affect Learning"

Elementary: 1.SL.1 Listen actively and adjust the use of spoken language (e.g., vocabulary) to communicate effectively with a variety of audiences and for different purposes.

1.SL. 4.2 Add drawings or other visual displays, such as pictures and objects, when sharing information to clarify ideas, thoughts, and feelings.

Secondary: 9-10.SL.2.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) on grade-appropriate topics, texts, and issues, building on others' ideas and expressing personal ideas clearly and persuasively.

"Leaving the Adolescent Brain"

Elementary: 6.SL.3.1 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

Secondary: 9-10.RN.2.1 Cite strong and thorough textual evidence to support analysis of what a text says explicitly as well as inferences and interpretations drawn from the text.

9-10.W.3.1 Write arguments in a variety of forms that –

- Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.

11-12.SL.4.1 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

"Contagious Emotions and Responding to Stress"

Elementary: 2.W.3.1 Write a logically connected paragraph or paragraphs that introduce an opinion, with a concluding statement or section and multiple reasons to explain why a certain course of action should be followed.

5.SL.2.2 Reflect on and contribute to ideas under discussion by drawing on readings and other resources.

Secondary: 9-10. SL. 4.3 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

11-12. RV-2.1 Use context to determine or clarify the meaning of words and phrases.

"Inside Out" Curriculum Resources

Creating Core Memories: <https://www.edutopia.org/blog/creating-core-memories-in-classroom-lori-desautels>

Islands of Personality and Trains of Thought: <https://www.edutopia.org/blog/islands-of-personality-trains-of-thought-lori-desautels>

How Emotions Affect Learning, Behavior, and Relationships: <https://www.edutopia.org/blog/emotions-affect-learning-behavior-relationships-lori-desautels>

Leaving the Adolescent Brain: <https://www.edutopia.org/blog/adolescent-brain-leaving-childhood-behind-lori-desautels>

Contagious Emotions and Responding to Stress <https://www.edutopia.org/blog/contagious-emotions-responding-to-stress-lori-desautels>

TEACHER CHEAT SHEET: NEUROSCIENCE

MAKING APPLIED EDUCATIONAL NEUROSCIENCE
EASY TO TEACH

• DESIGNED FOR THE "INSIDE OUT" CURRICULUM •

PARTS OF THE BRAIN: PRE-FRONTAL CORTEX

The pre-frontal cortex is the front-most portion of our brain and controls our logic, reasoning, decision making, and social behavior. This is the last portion of our brain to be developed, and many neuroscientists now claim that it continues to develop into our late twenties.

PARTS OF THE BRAIN: LIMBIC SYSTEM

The limbic system is a complex system made up of multiple parts of the brain. This is the system that is in charge of our basic emotions of fear, anger, and pleasure. This is where our amygdala and hypothalamus are located (which we will talk about later on).

PARTS OF THE BRAIN: BRAIN STEM/MIDBRAIN

This portion of the brain mainly functions to control our automatic and "primal functions," such as temperature regulation, our senses, heart rate, and breathing.



NEUROPLASTICITY

Our brains have the capacity to be changed at any point in our life due to the amazing concept of neuroplasticity. This is basically synonymous with malleability, and is perfect to teach our students that we can always learn new things and change the way we think.

NEUROHORMONES

Neurohormones are quite literally the hormones found in our brains. Two major neurohormones to know for these lessons are serotonin and dopamine. They both do a lot for our bodies, but for these lessons it is important to know that serotonin is a main contributor to our happiness and well-being, while dopamine is largely responsible for our reward-motivated behaviors as humans.

MIRROR NEURONS

Mirror neurons are exactly as they sound: they are neurons in our brain that literally "mirror" the behaviors and emotions of others. These are responsible for us feeling sad when we see others crying and yawning when we see someone else yawn!

MYELIN

Myelin is the insulating sheath around an axon (two neurons that come together to make a neural connection, or a new "idea" we have learned). Every time that we "exercise" that neural connection another layer of myelin is wrapped around it, creating a myelin sheath. The more myelin we have around an axon, the stronger that connection is! This is why "practice makes perfect." because every time we practice something we are making that connection stronger, just like building muscle.

PRUNING

Pruning is another way to say "getting rid of." For these lesson plans, the need-to-know about pruning is that during the adolescent years our brains prune away about half of the neural connections that we have built since birth. There are many connections that our brain recognizes that we don't need anymore, so it gets rid of those to make room for the new ones we will make.

"INSIDE OUT" SPECIFIC

In the film "Inside Out," that inspired and connected our lessons, there are specific terms that they use to explain functions and phenomena in the brain. These two are specifically utilized in these lesson plans, so to help here are some definitions.

Core Memory: These are memories of extreme importance in one's life that contribute to an aspect of one's personality (i.e. Riley from the film has a core memory of the first time she played hockey, which contributed to her love of hockey).

Island of Personality: Stemming from core memories, these "Islands of Personality" are key aspects of one's personality (i.e. Riley has a "Hockey Island").

STRESS RESPONSE SYSTEM

This is what we widely know as the "Fight or Flight" response. This is a complex response that starts with our eyes and ears- think of an oncoming car. When we see or hear an oncoming car, our eyes and ears send a signal to the amygdala, which processes the information. If it perceives a potential danger (as it would with an oncoming car), it will send a distress signal to the hypothalamus, which is the "command center" for many functions of the body, including our automatic functions (if you remember from the first page, are controlled by the brain stem). This will activate the "fight, flight, or freeze" response, which automatically increases your senses, heart rate, breathing, etc., to give you the best chance for survival. In the example of the oncoming car, this response would allow you to jump out of the way before even really thinking about it - if our body did not do this, our brains would send all of this information to the pre-frontal cortex (our "logical brain"), which would take a longer time to process the danger and reach safety.

In shorter terms: when our amygdala perceives a danger it sets the stress response system into motion, which in turn shuts off our pre-frontal cortex and elevates our automatic responses. This happens whether a danger is real or not: it is all about how our amygdala PERCEIVES it. This is why some of us feel the stress response system in situations such as public speaking or large public gatherings.



BRAIN REGULATION STRATEGIES

Since our Stress Response System can be activated without a real danger present, it is important for us and our students to be able to recognize when we are feeling this stress and know how to regulate. These brain regulation strategies can also be known as coping skills or focused attention practices.

Brain Regulation Strategies can be incorporated into daily classroom activities, and we recommend utilizing them in these lessons as you see fit. It is important for students to practice these strategies when they are not experiencing a stressful situation, as they are more likely to be functioning in their pre-frontal cortex and absorb the information. We also know that the more times students can practice these strategies, the more myelin will be coated in those connections so that when their stress response system IS activated they will be more likely to revert to one of the strategies that has a thick myelinated sheath.

Breath and movement are two of the best ways to regulate our brains- as long as you keep those in mind you can get creative with your strategies!

TWO OF OUR FAVORITES

Here are two of our favorite Brain Regulation Strategies to get you started.

Breath: Square Breathing (draw a square with your finger- while drawing left side breathe in for four counts; while drawing the top side hold your breath for four counts; while drawing the right side breathe out for four counts; while drawing the bottom side hold your breath out for four counts. Repeat at least three times).

Movement: Toes and Tense (While standing, slowly lift yourself up on your toes. While on your toes, feel your calves tense up- try to tense them even more and hold for ten seconds. Slowly release the tension and bring yourself down onto flat feet. Repeat at least three times).

Creating Core Memories

Lesson 1
Elementary
Time 30-45 mins

Objectives:

1. Students will be able to identify the following key terms: core memory, hippocampus, the limbic system.
2. Students will be able to relate to their 5 senses and creating core memories.



Materials:

Inside Out Core Memories:

<https://www.youtube.com/watch?v=pecha-7QOV0>

Changing Core Memories:

<https://www.youtube.com/watch?v=cYvaQ37EcvU>

- 5 Senses Chart
- Post it notes
- Dry Erase boards and markers
- Celebration materials (sprinkles, candles, streamers, balloons, ornaments, etc.)

Key Terms:

- Core Memory
- Hippocampus
- Limbic System

Why?

Understanding and naming our core memories creates a stronger self and class identity. If teachers provide authentic opportunities for students to create positive core memories we increase care, concern, and the call to action in our learning communities. Our brains hold the power to recall, recount, and relive some of our most defining moments. On the flip side, we must also note the natural function of pruning, and how it helps the brain prepare for deeper complexity and sophistication. When educators make the effort to listen to these personal core memories it invites stronger dialogue and purpose among the class. The brain learns through stories. It retrieves what is relevant, useful, and interesting. Make these moments happen in your classroom!

Instructions

Part 1: Hook

a. Have celebration materials (sprinkles, candles, streamers, balloons, ornaments, etc. - know your kids) on the front table "Pick one of these materials in your head- think about a time that you have seen this material."

b. Engage in a class discussion revolving around when they have seen the different materials. Encourage discussion about different memories, digging deep into the emotions/feelings behind them (does the memory make you happy? Sad?)

Part 2: Discussion and Video:

a. Class discussion about specific moments/holidays that students remember related to the materials

Class discussion about core memory

Guiding Questions:

- Who or what reminds you of this material? Why?
- What emotions/ feelings arise when you see this item?
- Where are our memories stored?

b. Watch two "Inside Out" videos and pay attention to 5 senses

c. Break up into partners and utilize "5 senses materials" to talk about 5 senses in their own core memories

- Join, share your partner's core memory
- Talk about how emotions and senses (from hippocampus/limbic system) help create and retain core memories

Part 3: Exit Ticket

If time allows:

- Students write the symbol of their core memory on a post-it note
- Students gather on the carpet or stand up to willingly share and guess one another's core memory. (i.e. Jane volunteers to share her symbol and then Tom guesses what the core memory might be (i.e.) If core memory is watching the Indy 500 then the symbol could be the smell of the gasoline or the opening remarks, "Drivers start your engines!")

Bonus Brain-Aligned Strategies:

"Mingle -Mingle" partner share game

Call on a student to pick the special word. Students can be creative and silly with words like "taco, unicorn, X-Box, etc." After students know the special word they will stand up and sing the chant "mingle, mingle, mingle!" over and over until the special word is said. When the teacher shares the special word, all students will freeze and turn to the person closest to him or her. Partners will share his or her symbol and guess what the core memory is. Students can also act out the symbol and have the partner guess it.

Utilize these videos and articles to supplement teacher or student understanding:

- <https://www.edutopia.org/blog/film-festival-brain-learning>
- <http://channel.nationalgeographic.com/brain-games/>
- <http://faculty.washington.edu/chudler/neurok.html>
- <https://video.nationalgeographic.com/video/brain-bank-sci>
- <https://www.youtube.com/user/SentisDigital>
- <https://www.edutopia.org/article/integrating-sel-classroom>

5 Senses Chart

Recall your own "core memory" - it could be a birthday party, scoring your first goal in a soccer game, your first vacation, ANYTHING! Work with your partner to share this memory and help each other sort out what sights, smells, feelings, tastes, and sounds you remember.

The chart is centered around a diagram of a brain. Five arrows point towards the brain from the following sense icons:

- Sight:** A red circle containing an eye icon.
- Smell:** A yellow circle containing a nose icon.
- Hearing:** A light blue circle containing an ear icon.
- Touch:** A purple circle containing a hand icon.
- Taste:** A green circle containing a mouth/lips icon.

Five large, empty rectangular boxes with double borders are arranged around the central diagram, one for each sense, for students to record their memories.

Creating Core Memories

Lesson 1
Secondary
Time 30-45 mins

Objectives:

1. Students will be able to identify the following key terms: core memory, hippocampus, limbic system, myelin, and neuroplasticity.
2. Students will be able to relate to their 5 senses and creating core memories.



Materials:

"Inside Out" Core Memories:

<https://www.youtube.com/watch?v=pecha-7QOV0>

"Inside Out" Changing Core Memories:

<https://www.youtube.com/watch?v=cYvaQ37EcvU>

Sentis Video

<https://www.youtube.com/watch?v=ELpfYCZa87g>

5 Senses Chart

- Post it notes
- Dry Erase boards and markers
- Celebration materials (sprinkles, candles, streamers, balloons, ornaments, etc.)

Key Terms:

- Core Memory
- Limbic System
- Myelin
- Neuroplasticity

Why?

Understanding and naming our core memories creates a stronger self and class identity. If teachers provide authentic opportunities for students to create positive core memories we increase care, concern, and the call to action in our learning communities. Our brains hold the power to recall, recount, and relive some of our most defining moments. On the flip side, we must also note the natural function of pruning, and how it helps the brain prepare for deeper complexity and sophistication. When educators make the effort to listen to these personal core memories it invites stronger dialogue and purpose among the class. The brain learns through stories. It retrieves what is relevant, useful, and interesting. Make these moments happen in your classroom!

Instructions

Part 1: Hook

a. Have celebration materials (sprinkles, candles, driver's license, keys, pet leash, etc. - know your kids) on front table/tables

"Pick one of these materials in your head- think about a time that you have seen this material?"

b. Time students for two minutes to make as many connections to the material as possible (have them record these in a notebook or on scrap paper)

c. Once the two minutes is up, ask student to circle their top three most vivid connections.

d. Launch a discussion setting (inside outside circle, Socratic-seminar, pair share, etc)

Guiding Questions:

-Who or what reminds you of this material? Why?

-What emotions/ feelings arise when you see this item?

-How does this item define a time or memory in your life?

-Why are we able to connect to one item in so many different ways?

-Where are our memories stored?

Part 2: Discussion and Video

a. Class discussion about specific times/holidays/experienced that they remember related to the materials (can be ANY emotion- happy, sad, etc.)

b. Watch two "Inside Out" Videos and pay attention to 5 senses, discuss how memories can be changed

c. Break up into partners and utilize "5 senses materials" to talk about their 5 senses in their own core memories (5 minutes) - ensure understanding that our emotions shape our memories, and emotions are in the limbic system

d. Join together, discuss neuroplasticity - Watch Sentis video

e. Ask for volunteer to come and use dumbbell - while student is doing bicep curls ask kids what is happening to the muscle (building, getting stronger, etc.)- this is what myelin is, basically like you strengthening the muscles in your brain that make memories stronger!
(Working out is like neuroplasticity- the ability to change your brain and memories)

f. If time allows:

-Have students write a list poem or haiku using key terms (independent or partners)

Part 3: Exit Ticket:

Write a metaphor, simile or hyperbole for key terms on post-it note (have key terms written on board) Save post it note anchor chart for the classroom community to refer to throughout the year.

Bonus Brain-Aligned Strategies:

"Mingle -Mingle" partner share game

Call on a student to pick the special word. Students can be creative and silly with words like "taco, unicorn, X-Box, etc." After students know the special word they will stand up and sing the chant "mingle, mingle, mingle!" over and over until the special word is said. When the teacher shares the special word, all students will freeze and turn to the person closest to him or her. Partners will share his or her symbol and guess what the core memory is. Students can also act out the symbol and have the partner guess it.

Utilize these videos and articles to supplement teacher or student understanding:

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<http://channel.nationalgeographic.com/brain-games/>

<http://faculty.washington.edu/chudler/neurok.html>

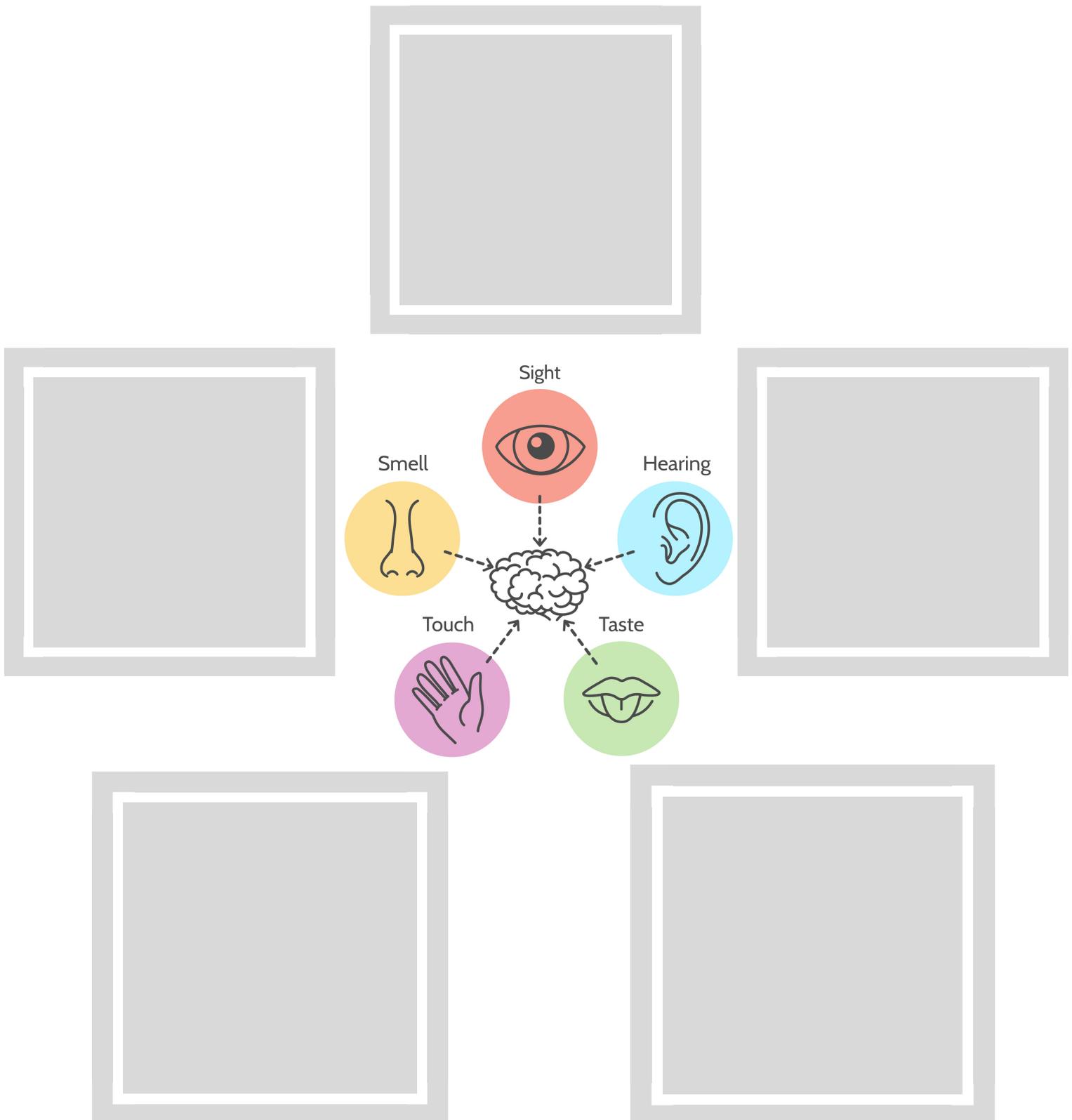
<https://video.nationalgeographic.com/video/brain-bank-sci>

<https://www.youtube.com/user/SentisDigital>

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5 Senses Chart

Recall your own "core memory" - it could be a birthday party, scoring your first goal in a soccer game, your first vacation, ANYTHING! Work with your partner to share this memory and help each other sort out what sights, smells, feelings, tastes, and sounds you remember.



Islands of Personality

Lesson 2
Elementary
Time 30-45 mins

Objectives:

1. Students will be able to analyze the main idea and details of a core memory.
2. Students will be able to create his or her own personality island.



Materials:

- Core Memory Chart (see lesson #1)
- Post-it notes
- Paper plates
- Magazines
- Scissors
- Glue

Key Terms:

- Core Memory
- Islands of Personality
- Main Idea and Details

Inside Out Islands of Personality

[https://www.youtube.com/watch?](https://www.youtube.com/watch?v=3weU3tST3EM&list=PLg3djftwsUDlyFPYepet525IDOH3IEssQ)

[v=3weU3tST3EM&list=PLg3djftwsUDlyFPYepet525IDOH3IEssQ](https://www.youtube.com/watch?v=3weU3tST3EM&list=PLg3djftwsUDlyFPYepet525IDOH3IEssQ)

Why?

It is important for kids to be able to start to recognize and define their personalities, as well as understand how those aspects of their personalities came to be. This type of language is meant to help foster a strong sense of identity, while also allowing students to understand different perspectives and personalities of their peers. A better understanding will create a stronger, more trusting learning community. This lesson can also support tolerance, acceptance, and appreciation from other extracurricular activities (sports, theater, clubs, etc.)

Instructions

Part 1: Hook

a. Ask students to refer to core memory lesson (see lesson #1). Students could pull out core memory chart, reference it on the anchor chart, or mentally recall the core memory.

b. Using a piece of scrap paper students will have 30 seconds to write down all and any words that come to mind when thinking about that core memory.

Encourage students that there is no right or wrong!

Part 2: Discussion and Video

a. Play clip and ask students to notice how the islands of personality are formed

b. Turn to a partner and discuss what makes an island of personality while standing and mirroring each other's movements (see brain aligned strategies below)

Islands of personality- formed through core memories (ex. "goof-ball island, family island, hockey island, honesty island, and friendship island")

c. Discuss how the main idea of a core memory creates an aspect of our personalities
Model Riley's hockey island with a visual on the board or anchor chart

d. Show the main idea (hockey) in the center and all other details about this island stemming from the center (ex. images for main idea: sun, flower, table, pizza, etc.)

e. Then have students analyze their words written during hook to generate the main idea of their core memories

f. Draw or write the core memory of the same image and model (sun, flower, table, pizza, etc.)

Part 3: Exit Ticket

Students create their own island of personality from the discussion. Students will write the title of this island in the center of their paper plate and use magazine cutouts to display details of their island. Display each island on an ocean like a bulletin board or hang from the ceiling.

Bonus Brain-Aligned Strategies:

Artistic Influence: Make this a long-term art project! Have students create multiple "islands of personality" for a character, historical figure, or for themselves out of art materials. Partner with your art teacher to design curricula across disciplines!

Brainiac Word Wall: Create a word wall with student definitions paired next to dictionary definitions. Charge students with the task to bring this word wall to life with hand created pictures, examples, and photographs.

Islands of Personality

Lesson 2
Secondary
Time 30-45 mins

Objective:

Students will be able to analyze relevant aspects of personality for a specific character or historical figure being studied.



Materials:

- Core Memory Chart (see lesson #1)
- Post-it notes

Inside Out Islands of Personality
<https://www.youtube.com/watch?v=3weU3tST3EM&list=PLg3djftwsUDiyFPYepet525IDOH3IEssQ>

Key Terms:

- Core Memory
- Islands of Personality
- Myelin

Why?

It is important for kids to be able to start to recognize and define their personalities, as well as understand how those aspects of their personalities came to be. This type of language is meant to help foster a strong sense of identity, while also allowing students to understand different perspectives and personalities of their peers. A better understanding will create a stronger, more trusting learning community. This lesson can also support tolerance, acceptance, and appreciation from other extracurricular activities (sports, theater, clubs, etc.)

Instructions

Part 1: Hook

- a. Ask students to refer to core memory lesson (see lesson #1). Students could pull out core memory chart, reference it on the anchor chart, or mentally recall the core memory.
- b. Using a piece of scrap paper students will have 30 seconds to write down nouns, verbs, and adjectives that come to mind when thinking about that core memory.

*Encourage students that there is no right or wrong!

Part 2: Discussion and Video

- a. Play clip and ask students to notice how the islands of personality are formed
-Review with students the key terms learned in the "core memory" lesson (myelin, neuroplasticity).
- b. Write the key terms on the board to assist with their memories.
- c. Have students turn to a partner and discuss what makes an island of personality while standing and mirroring each other's movements (see brain aligned strategies below). -Ask for volunteers to share what they and their partner discussed.

d. Prompt students if needed to see the connection between core memories and islands of personality being memories that deeply involve their senses, memories/traits that they use frequently (building a myelin sheath around certain neural connections), and the ability to change these (neuroplasticity).

e. Make a list of characters or historical figures that you are currently studying on the board. Explain to students that they will each be choosing one of these characters/figures to identify one of their islands of personalities based on core memories and/or traits that they display.

They will cite textual evidence and relate it to the key terms to back up their thinking, but can otherwise be creative.

Part 3: Exit Ticket

a. Students create a multimedia work representing the science of emotion behind a historical figure or character's core memory/island of Personality. Examples of technology mediums could include Discover Education Board, PowerPoint, Wordle, etc.

Bonus Brain-Aligned Strategies:

Making this a long-term art project! Have students create multiple "Islands of Personality" for a character, historical figure, or for themselves out of art materials. Partner with your art teacher to design curricula across disciplines! Hang multimedia work around the room and have a gallery walk!

How Emotions Affect Learning

Lesson 3
Elementary
Time 30-45 mins

Objective:

Students will be able to name their different emotions and analyze the different roles each emotion plays in their lives.



Materials:

- Materials that can be manipulated (i.e. slime, Play-Doh, silly putty, etc.)
- Materials that cannot be manipulated (i.e. keys, a rock, etc.)

Key Terms:

- Neuroplasticity
- Emotions

Inside Out Meet Riley's Emotions

<https://www.youtube.com/watch?v=1S0RKRRyqhQ>

Sentis Video: Neuroplasticity

<https://www.youtube.com/watch?v=XSzsl5aGcK4>

Why?

"If you can name it, you can tame it" is a common phrase - and for good reason! Many of our children believe that our "negative" emotions such as sadness and anger are inherently bad. This discourages them from sharing their emotions, leaving them vulnerable to isolation, depression, and anxiety. Our students need to know that all emotions are valid and more so all emotions are important! This lesson will help kids explore that, as well as learn that they can change their thinking about their emotions as we utilize and comprehend the powers of neuroplasticity.

Instructions

Part 1: Hook

-Have different materials visible, some that are easily changed (i.e. Play-Doh, slime, putty, etc.), and some that cannot be changed (i.e. a rock, toy car, key, etc.).

(For extra novelty, hide these items in bags!)

-Make sure that the items that can be changed are grouped together and the items that cannot be changed are also grouped together.

-Ask for two volunteers to come and feel/describe the items. Have two other volunteers be the “recorders” for the two students describing the items.

-The goal is to have them articulate the characteristics of each group of items as other classmates scribe them on the board.

-Once the items are described, have the class categorize the two groups in one word/phrase. The goal is to have them identify that one group is a group of items that is malleable/can change form, and one is not.

Part 2: Model and Video

Ask students to STAND if they think that the group that can be changed is like our brains (use the students’ language for how they described that group), and tell them to sit on the floor/squat if they think that our brains are like the group that cannot be changed (use the students’ language).

Students gather in a circle, pass around materials while prompting discussion about how items may relate to our brains. Explain the scientific language of neuroplasticity while discussing that our brains are can change (refer to definition on Teacher Reference Sheet). Write definition on board.

-Play Sentis Video about Neuroplasticity

-Students return to seats and pass out a piece paper (or type if technology is available for all students).

Play Inside Out Meet Riley’s Emotions video to introduce our main emotions: Joy, Sadness, Fear, Disgust, and Anger

-Students get into pairs or groups of three and cite textual evidence of an emotion being shown from text you are currently studying in class (novel, historical figure, article, etc.). Have students explain this scene or part of the text and identify where the emotion is shown.

-Come back together as a class and have partners/groups share their textual evidence citing the emotions. Discuss as a class how we think about our emotions (i.e. do we always see sadness as a bad thing?). Relate this back to neuroplasticity, discussing the purpose for ALL emotions and trying to change our thinking about them.

1.

Part 3: Exit Ticket

Have students return to their groups. Depending on which emotion the students’ group chose to showcase, have them discuss and write down their group’s responses to the following discussion questions (If they chose a situation where the character showed sadness, have them answer questions 1-3).

Bonus Brain-Aligned Strategies:

Paths of Neuroplasticity: To showcase another way of neuroplasticity, utilize Hot Wheels cars/tracks! Discuss the different “roadways” in terms of neuroplasticity.

Use wiki-stix, Play-Doh, drawing, etc. to model neuroplasticity for the character’s situation

How Emotions Affect Learning

Lesson 3
Secondary
Time 30-45 mins

Objective:

Students will be able to name their different emotions and analyze the different roles each emotion plays in their lives.



Materials:

-Materials that can be manipulated (i.e. slime, Play-Doh, silly putty, etc.)

-Materials that cannot be manipulated (i.e. keys, a rock, etc.)

Inside Out Meet Riley's Emotions

<https://www.youtube.com/watch?v=1S0RKRRyqhQ>

Sentis Video: Neuroplasticity

<https://www.youtube.com/watch?v=XSzsl5aGcK4>

Key Terms:

-Neuroplasticity
-Emotions

Why?

"If you can name it, you can tame it" is a common phrase - and for good reason! Many of our children believe that our "negative" emotions such as sadness and anger are inherently bad. This discourages them from sharing their emotions, leaving them vulnerable to isolation, depression, and anxiety.

Our students need to know that all emotions are valid and more so all emotions are important! This lesson will help kids explore that, as well as learn that they can change their thinking about their emotions as we utilize and comprehend the powers of neuroplasticity.

Instructions

Part 1: Hook

a. Have different materials visible, some that are easily manipulated (i.e. Play-Doh, slime, putty, etc.), and some that are not easily manipulated (i.e. a rock, toy car, key, etc).

(For extra novelty, hide these items in bags!)

Be sure that the items that can be changed are grouped together and the items that cannot be changed are also grouped together.

b. Ask for two volunteers to feel/describe the items. Ask for two other volunteers be the “recorders” for the two students describing the items.

The goal is to have them articulate the characteristics of each group of items as other classmates scribe them on the board.

c. Once the items are described, have the class categorize each of the two groups into one word/phrase.

The goal is to have them identify that one group is a group of items that is malleable/can change form, and one is not.

Part 2: Model and Video

a. Ask students to STAND if they think that the group that can be changed is like our brains (use the students’ language for how they described that group), and tell them to sit on the floor or squat if they think that our brains are like the group that cannot be changed (again, use the students’ language).

b. Students gather in a circle, pass around materials while prompting discussion about how items may relate to our brains.

Explain the scientific language of neuroplasticity while discussing that our brains are can change (refer to definition on Teacher Cheat Sheet). Write definition on board.

c. Play Sentis Video about neuroplasticity. Assess for understanding by asking for a student to explain neuroplasticity in their own words.

d. Instruct students to return to their seats while you pass out a piece paper to each student.

e. Play Inside Out Meet Riley's Emotions video to introduce our main emotions: Joy, Sadness, Fear, Disgust, and Anger. Discuss initial reactions to the information.

f. Then, have students get into pairs (or groups of three). Instruct them that on their pieces of paper they are to cite textual evidence of an emotion being shown from text you are currently studying in class (novel, historical figure, article, etc.).

g. Come back together as a class and have partners/groups share their textual evidence citing the emotions. Discuss as a class how we think about our emotions (i.e. do we always see sadness as a bad thing?). Relate this back to neuroplasticity, discussing that we can purposefully change the way that we think about our emotions. Encourage them to keep thinking about this as you go through future lessons.

Part 3: Exit Ticket

Have students return to their groups. Depending on which emotion the students’ group chose to showcase, have them discuss and write down their group’s responses to the following discussion questions (If they chose a situation where the character showed sadness, have them answer questions 1-3).

Bonus Brain-Aligned Strategies:

Paths of Neuroplasticity: To showcase another way of neuroplasticity, utilize Hot Wheels cars/tracks! Discuss the different “roadways” in terms of neuroplasticity.

Use wiki-stix, Play-Doh, drawing, etc. to model neuroplasticity for the character’s situation

Leaving the Adolescent Brain

Lesson 4
Elementary
Time 30-45 mins

Objectives:

Students will be able to create a tailored list of applicable stress regulation strategies.



Materials:

- Cardstock for bookmarks
- Magazines (try to choose magazines with pictures and words that would be used for "Stress Regulation Strategies"- if magazines are not available, newspapers or online pictures/words can work as well)
- Scissors
- "Inside Out" Mind Workers
<https://www.youtube.com/watch?v=E9NMUGhJ7FE>

Key Terms:

- Neurohormones (Serotonin and Dopamine)
- Frontal Lobe
- Pruning
- Brain Regulation Strategies

Why?

Coming off of our lesson about how all emotions are valid, and how we have the power to change our thinking about them, it is important for our students to learn how we can re-regulate our brains when we are feeling negative emotions such as sadness and anger. It is powerful for kids to learn about the neurohormones responsible for us feeling happy, and that we can do things that help to release those neurohormones, therefore regulating our brains.

It is a crucial time for students to be prepared for the neurological changes that will happen as adolescents, and that their brains will go through a process of getting rid of half of their neural connections! The more that we can normalize the adolescent years and prepare students for the different emotions, the better equipped they will be to face those tough transition years ahead.

Instructions

Part 1: Hook

Bring in something that is meaningful to you that represents your childhood/being a kid. (This could be a blanket, a stuffed animal, and toy, etc.) Pass this around the room and ask students to notice and wonder why you brought this in.

Explain to students that this item represents being a kid to you. Then ask students to draw or write some things that represent being a kid to them (this could be playing outside with friends, having a toy, etc.)

Part 2: Discussion and Video

a. Have students gather in a circle. Play the "Inside Out Mind Workers" video.

Encourage students to react and share their thoughts on what this video might mean.

b. Use an anchor chart to discuss with students that at some point within the next few years that their brains will go through something called "pruning" (see Teacher Cheat Sheet).

This means that our brains will start to get rid of connections that they don't need any more and start to "leave" childhood. When this happens, they might experience different emotions because of the neurohormones released.

Part 3: Exit Ticket

Have students choose one brain regulation strategy that they can use in the classroom/school if they are feeling overwhelmed and write it down on a notecard to hand to the teacher.

c. Guiding Questions:

Have students get into pairs (or groups of three) to answer the following discussion questions together. Write discussion questions on the board for whole class

OR pass out handouts with discussion questions

-What are the mind workers doing with the vacuum?

-The female mind worker says, "When Riley doesn't care about a memory it fades". Why would our brain allow for this fading/pruning to occur?

-Can you think of something that you loved as a young child that you no longer remember all the details? (I.e. A favorite toy, a talent, or a phone number?)

-Why does Riley get angry while video chatting her friend? How could her emotions have changed so quickly?

-Can you think of a moment when you felt a negative emotion and did not understand why you felt that way?

d. Come back together as a whole group. Explain to students that this video seemed a bit scary and disheartening, but that there is good news for our brain! Brain regulation strategies are available for us to use at any time we are feeling dysregulated (or that our mind is being "vacuumed"). Use an anchor chart to brainstorm different ways that we can help ourselves cope. See brain regulation strategies list attached for examples.

e. Students return to their seats and pass out cardstock for bookmarks. Have magazines, papers, pens, and other art materials to allow students to create their own "Brain Regulation Strategies Bookmark" with their own personal regulation strategies to use when they feel overwhelmed.

Bonus Brain-Aligned Strategies:

Q & A Search:

Imbed a small brain interval by taping discussion question cards on the bottom of a few students' chairs. After the video, ask students to search for the hidden cards. Students can choose to share the question out loud or pass to a friend. This brain interval offers novelty, movement, and choice for the students to better engage in the discussion questions.

Brain Regulation Strategies (Examples)

- Use a fidget
- Listen to music
- Breathing exercises
- Run
- Yoga
- Go for a walk
- Go for a bike ride
- Read a book
- Doodle
- Journal
- Count slowly forward or backward
- Drink water
- Wrap up in a blanket
- Hum or sing
- Diffuse essential oils
- Draw/paint
- Do a craft
- Talk to someone
- Color in a coloring book
- Take a shower or bath
- Ask for a break
- Push against a wall
- Ask for a hug from someone you trust
- Play with an animal
- ROYGBIV I Spy: Look for each color of the rainbow around the room
- Write in your planner
- Paint your nails
- Look at the sky
- Clean/organize something
- Knit or sew
- Meditate
- Bake or cook
- Rip paper into tiny pieces
- Hug a pillow or stuffed animal
- Dance
- Do something that you have been procrastinating
- Create something new
- Go to a friend's house
- Watch a movie or TV show that makes you laugh
- Make a playlist of your favorite songs
- Do something nice for someone else
- Rearrange your room
- Write yourself a positive letter
- Do a puzzle
- Ask your friends to play a game
- Write a poem
- Do a wordsearch or crossword puzzle
- Listen to a podcast or book on tape

Leaving the Adolescent Brain

Lesson 4
Secondary

Time 30-45 mins (with optional extension to multiple days)

Objectives:

1. Students will be able to create a tailored list of applicable stress regulation strategies.
2. Students will be able to create and present an argument with research-based claims and transition words.



Materials:

Inside Out Bing Bong: Leaving the Adolescent Brain

<https://www.youtube.com/watch?v=tXj61BXEy2M>

Teen Brain Anatomy

<https://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/work/anatomy.html>

Interview with Jay Giedd

<https://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/interviews/giedd.html>

Teen Brain

<https://www.youtube.com/watch?v=EGdlpaWi3rc>

The Teenage Brain Explained

<https://www.youtube.com/watch?v=hiduiTq1ei8>

Web Quest Links:

Sleep:

<https://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/from/>

More electives/extracurricular activities:

<https://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/work/>

Better nutrition in schools

<https://health.usnews.com/health-news/health-wellness/articles/2016-01-05/teens-your-brain-needs-real-food>

Key Terms:

- Neurohormones (Serotonin and Dopamine)
- Frontal Lobe
- Brain Regulation Strategies

Why?

Coming off of our lesson about how all emotions are valid, and how we have the power to change our thinking about them, it is important for our students to learn how we can re-regulate our brains when we are feeling negative emotions such as sadness and anger. It is powerful for kids to learn about the neurohormones responsible for us feeling happy, and that we can do things that help to release those neurohormones, therefore regulating our brains.

This lesson is particular important for this age group, as many are experiencing pruning and the changes in their brains/bodies. The more that we can normalize these adolescent years and prepare them with healthy brain habits and regulation strategies, the better equipped they will be during these transition years.

Instructions

Part 1: Hook

a. Play video: "Inside Out" Bing Bong
Bing Bong Signifies Leaving the Adolescent Brain
-Post these questions around the room and give students 90 seconds at each station with a partner to answer the **following questions**:

- What or who was your Bing Bong?
- Could it be an object (like a blanket or teddy bear) or something abstract?
- What does Bing Bong symbolize?
- Why is it important for Riley to let go of Bing - Bong?
- Why did Bing Bong jump off the wagon?
- What makes it so sad for the audience (especially parents and adults) as we watch this part?
- Do we really ever lose Bing Bong? Explain.
- Do you have a core memory of an experience from your imagination? What is it like?

Part 2: Overview

a. After the students have watched the video and answered the questions around the room, explain to them the process of pruning (see Teacher Cheat Sheet). Engage in a discussion about the fact that their brains are going through a lot of changes, and so they might be experiencing or come to experience many different emotions. Discuss how it is important for us all to always be utilizing brain regulation strategies (see attached examples for reference).

b. Instruct students that they will be partaking in a WebQuest activity that will help them to gather information and research about healthy brain habits and regulation strategies. Have students get into pairs/group of three (see Bonus Brain-Aligned Strategies for pairing).

c. Students (in their pairs/groups) will research the following topics through the WebQuest links: School Start-Up times, Importance of Sleep, Nutrition, and the Brain, Stress Response System,

If you are choosing to do this lesson in one day, please end with step d. If you are choosing to stretch this lesson into an argumentative project, please skip step 3 and continue with step e.

d. (If you are choosing to do this lesson in one day) Towards the end of class, have student pairs/groups pick one topic to share out.

e. (If you are choosing to continue this lesson into an argumentative project). Toward the end of class on Day 1, have each student group state their topic/thesis (as their exit ticket).

f. Day 2 and beyond (time allotted for project up to your discretion): Have students regroup into their pairs/groups and work together to organize an argumentative project to present to the class on their chosen topic. Projects can be presented in essay format, a speech, PowerPoint, video, or other means to argue their topic.

Part 3: Exit Ticket

Students will individually write an argumentative piece highlighting the evidence extracted from each source. Students can choose to present essays to the class, another grade level, the administration or parents. While students present, classmates will fill out a feedback form with "two stars and a wish". Stars represent something learned or done well and wishes represents constructive feedback for improvement.

Bonus Brain-Aligned Strategies:

Pairing students- Place numbered post it notes underneath each chair before class. Make sure to have two of each number for student to know their partner. Set a timer for 30 seconds for students to find his or her partner in the room. This method is very novel promoting engagement and curiosity. Students will also activate the RAS (reticular activating system) giving a healthy dose of energy and alertness for the activity.

Project presenting- Have the students present to a different audience that connects with them! Another class, a principal, etc. Giving students the platform to speak their mind connects them to their learning deeper, as well as forms connections with those they present to!

Brain Regulation Strategies (Examples)

- Use a fidget
- Listen to music
- Breathing exercises
- Run
- Yoga
- Go for a walk
- Go for a bike ride
- Read a book
- Doodle
- Journal
- Count slowly forward or backward
- Drink water
- Wrap up in a blanket
- Hum or sing
- Diffuse essential oils
- Draw/paint
- Do a craft
- Talk to someone
- Color in a coloring book
- Take a shower or bath
- Ask for a break
- Push against a wall
- Ask for a hug from someone you trust
- Play with an animal
- ROYGBIV I Spy: Look for each color of the rainbow around the room
- Write in your planner
- Paint your nails
- Look at the sky
- Clean/organize something
- Knit or sew
- Meditate
- Bake or cook
- Rip paper into tiny pieces
- Hug a pillow or stuffed animal
- Dance
- Do something that you have been procrastinating
- Create something new
- Go to a friend's house
- Watch a movie or TV show that makes you laugh
- Make a playlist of your favorite songs
- Do something nice for someone else
- Rearrange your room
- Write yourself a positive letter
- Do a puzzle
- Ask your friends to play a game
- Write a poem
- Do a wordsearch or crossword puzzle
- Listen to a podcast or book on tape

Contagious Emotions and Stress Response System

Lesson 5
Elementary
Time 30-45 mins

Objectives:

1. Students will be able to describe how mirror neurons affect our mood and brain state.
2. Students will be able to model and educate others about healthy stress response strategies



Materials:

-Inside Out Family Dinner Scene

https://www.youtube.com/watch?v=Cjgdiy_SGjA

-Mirror Neurons Part 1

www.youtube.com/watch?v=XzMqPYfeA-s&list=RDQMDzvo_A7NaXY

-Mirror Neurons Part 2

www.youtube.com/watch?v=xmEsGQ3JmKg&index=2&list=RDQMDzvo_A7NaXY

-Chocolate/candy (a chocolate chip, Hershey kiss, etc.)

Key Terms:

Mirror Neurons
Stress Response System

Why?

Mirror neurons are a crucial part to understand our interactions with others, which is a foundational aspect of building classroom community.

This lesson is meant to build on the previous lessons and teach students another way to recognize how emotions are impacting their learning. The brain regulation strategies created in the previous lesson are something that should not be taught in isolation (as we know the more we utilize something, the stronger that neural connection will be!), so you will see that they are incorporated into this crucial lesson.

Instructions

Part 1: Hook

a. Place chocolate/candy on a front table where students can see. You can either demonstrate yourself or ask a student to volunteer in order to slowly and deliberately eat the chocolate/candy piece.

b. While you or the student is eating the piece, ask students to describe what they are seeing/feeling.

The goal is to have the students recognize that they can almost "feel" what the volunteer eating the chocolate/candy piece is feeling, so you may prompt students if needed.

c. After students have recognized that they can "feel" what the volunteer is feeling, explain mirror neurons (see Teacher Cheat Sheet).

Part 2: Discussion and Video

a. Tell students that you are going to play a humorous scene from Inside Out. Ask them to pay close attention to how the mom and dad's brain states change based on Riley's mood, and how this might be showing mirror neurons. Play Inside Out Family Dinner Scene.

b. When the video is complete, ask students: "How were Riley's mom and dad feeling at the beginning of dinner, versus when they realized Riley's attitude change?" (Students should recognize that the mom and dad were feeling happy at the beginning of the scene but then their brains "mirrored" Riley's mood when they recognized that she was feeling negative)

c. (optional) Act it out! Create a seemingly organic situation where your mood suddenly changes to angry or sad. You could pretend to spill a drink on your papers or yourself and get angry or sad at the situation, tell the students about the "horrible" day you are having (you could make up flat tire, forgetting lunch, etc).

Ensure that the situation you create is benign and not aimed at the class or any specific student, as well as not a trigger for your students). After you do this, ask how your class is feeling. The goal is to have them recognize that once you changed your mood their brain states "mirrored." Tell the students that even though your scenario was made up, their brains mirrored your mood.

d. Brain Regulation Strategies! Discuss with students that the strategies they learned in Lesson #4 (The Adolescent Brain) are important to continuously monitor in order to be able to regulate our brains. Explain that brain regulation strategies help them when they recognize that their brains are mirroring another person's attitude.

e. Have a chalk talk on the board of things students like to do when they are feeling overwhelmed/their brain regulation strategies (i.e. breathing, distraction, reading, doodling, take a break, etc). Relate this to how we are in control of our brains, and if we can sense that we are mirroring negative emotions we can control what we do.

f. Discuss that we can also do things to help that person, such as validation, take a break, give the person space, etc. Break students off into pairs to practice validation strategies (see Validation scenarios and strategies sheet attached).

Part 3: Exit Ticket

Students will write a short paragraph or draw a short scene describing a time when he or she felt sad or angry from another person (this could also connect to a novel character or historical figure). Next students will write an applicable brain regulation to combat the negative situation. For extra novelty, these brain strategies can be recorded on a popsicle stick to pull out and match each paragraph. You then can the popsicle sticks in a jar and refer to them throughout the year. Display these scenarios in the classroom.

Bonus Brain-Aligned Strategies:

Act it out (continued): Ask another faculty member or parents to step in and model the effects of mirror neurons to the class. Provide this person with a scenario of sadness or anger that the students will believe. After the encounter share your emotions with the class (emotions should match the scenario). Discuss how our mirror neurons were impacted by another person.

Validation

Validation is an important part of co-regulating with someone (helping them regulate their emotions). It is a great way to build connection and relationship with others. The basis of validation is making sure that the person knows their feelings are valid/warranted. Validation offers no judgment, simply listening to learn. On this sheet you will find examples of validating phrases, as well as scenarios to practice using these phrases. You will also find some examples of invalidating phrases- these are phrases that involuntarily make the other person feel as though their feelings are unimportant or unwarranted, and drive disconnection.

Validating Phrases

- "That must be really frustrating."
- "I can understand why you feel that way."
- "I can't imagine what this feels like for you."
- "I think I would feel the same way if I were in your shoes."
- "I imagine that you are feeling pretty frustrated, right?"
- "That feels like that is a really big challenge right now."
- "Of course you're scared to do that, new things are scary for everyone!"

Invalidating Phrases

- "I think you're overreacting."
- "At least _____."
- "Don't worry, tomorrow will be better"
- "Get over it."
- "Look on the bright side..."
- "That happened to me, and I got over it."
- "This isn't that big of a deal."
- "You're tougher than that!"
- Stop complaining, you're being so negative."
"Well maybe that wouldn't have happened if you hadn't been doing _____."

Validation Scenarios

1. A friend's family dog ran away. Your friend is extremely upset and talks to you about it. They say, "I can't believe she ran away, I am so scared for her! I miss her so much, what if something happens to her?"

Validating response: "Of course you're scared, that's such a scary thing! That makes perfect sense to me. I'm here for you."

Invalidating response: "Don't worry about it, worrying doesn't change anything!"

2. Your friend's family had a trip to Kings Island planned this past weekend, but it got rained out and they couldn't go. Your friend tells you "I'm so mad that it rained! I wanted to go to Kings Island and it's the only weekend we could go, it's not fair!"

Validating response: "Oh boy I would be upset too! Those trips don't come up often, and I know how excited you were."

Invalidating response: "It's just an amusement park! At least it wasn't something important!"

Your Turn to Try!

3.

4.

Validating response:

Validating response:

Invalidating response:

Invalidating response:

Contagious Emotions and Stress Response System

Lesson 5
Secondary
Time 30-45 mins

Objectives:

1. Students will be able to describe how mirror neurons affect our mood and brain state.
2. Students will be able to model and educate others about healthy stress response strategies



Materials:

Mirror Neuron Article

<http://sitn.hms.harvard.edu/flash/2016/mirror-neurons-quarter-century-new-light-new-cracks/>

Inside Out Family Dinner Scene

https://www.youtube.com/watch?v=Cjgdiy_SGjA

Mirror Neurons Part 1

www.youtube.com/watch?v=XzMqPYfeA-s&list=RDQMDzvo_A7NaXY

Mirror Neurons Part 2

www.youtube.com/watch?v=xmEsGQ3JmKg&index=2&list=RDQMDzvo_A7NaXY

Chocolate/candy (a chocolate chip, Hershey kiss, etc.)

Key Terms:

Mirror Neurons
Stress Response System

Why?

Mirror neurons are a crucial part of us understanding our interactions with others, which is a foundational aspect of building classroom community.

This lesson is meant to build on the previous lessons and teach students another way to recognize how emotions are impacting their learning. The brain regulation strategies created in the previous lesson are something that should not be taught in isolation (as we know the more we utilize something, the stronger that neural connection will be!), so you will see that they are incorporated into this lesson.

Instructions

Part 1: Hook

a. Place chocolate/candy on a front table where students can see. You can either demonstrate yourself or ask a student to volunteer in order to slowly and deliberately eat the chocolate/candy piece.

b. While you or the student is eating the piece, ask students to describe what they are seeing/feeling.

The goal is to have the students recognize that they can almost "feel" what the volunteer eating the chocolate/candy piece is feeling, so you may prompt students if needed.

c. After students have recognized that they can "feel" what the volunteer is feeling, explain mirror neurons (see Teacher Cheat Sheet).

Part 2: Discussion and Video

a. Tell students that you are going to play a humorous scene from Inside Out. Ask them to pay close attention to how the mom and dad's brain states change based on Riley's mood, and how this might be showing mirror neurons. Play Inside Out Family Dinner Scene.

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c. (optional) Act it out! Create a seemingly organic situation where your mood suddenly changes to angry or sad. You could pretend to spill a drink on your papers or yourself and get angry or sad at the situation, tell the students about the "horrible" day you are having (you could make up flat tire, forgetting lunch, etc).

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d. Brain Regulation Strategies! Discuss with students that the strategies they learned in Lesson #4 (The Adolescent Brain) are important to continuously monitor in order to be able to regulate our brains. Explain that brain regulation strategies help them when they recognize that their brains are mirroring another person's attitude.

e. Have a chalk talk on the board of things students like to do when they are feeling overwhelmed/their brain regulation strategies (i.e. breathing, distraction, reading, doodling, take a break, etc). Relate this to how we are in control of our brains, and if we can sense that we are mirroring negative emotions we can control what we do.

f. Discuss that we can also do things to help that person, such as validation, take a break, give the person space, etc. Break students off into pairs to practice validation strategies (see Validation scenarios and strategies sheet attached).

Part 3: Exit Ticket

Each pair should write down their validation scenario and the brain regulation strategy that they chose for the situation on a note card to hand into the teacher.

OR

Students will write a short paragraph or draw a short scene describing a time when he or she felt sad or angry from another person (this could also connect to a novel character or historical figure).

Bonus Brain-Aligned Strategies:

Have students make their own notecards, bookmarks, or sheets of paper with brain regulation strategies! Relate this to a historical figure or character that you are studying in class and identify a scenario where they were mirroring another person's emotions, as well as what brain regulation strategy they could have done.

Validation

Validation is an important part of co-regulating with someone (helping them regulate their emotions). It is a great way to build connection and relationship with others. The basis of validation is making sure that the person knows their feelings are valid/warranted. Validation offers no judgment, simply listening to learn. On this sheet you will find examples of validating phrases, as well as scenarios to practice using these phrases. You will also find some examples of invalidating phrases- these are phrases that involuntarily make the other person feel as though their feelings are unimportant or unwarranted, and drive disconnection.

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- "At least _____."
- "Don't worry, tomorrow will be better"
- "Get over it."
- "Look on the bright side..."
- "That happened to me, and I got over it."
- "This isn't that big of a deal."
- "You're tougher than that!"
- Stop complaining, you're being so negative."
"Well maybe that wouldn't have happened if you hadn't been doing _____."

Validation Scenarios

1. A friend has failed a test, and comes up to you. They say "I studied so hard for this test, I cannot believe that I failed! I'm never going to do well!"

Validating response: "Wow, I would be upset too if I put that much effort in! It makes sense that you're frustrated."

Invalidating response: "Whatever, I'm sure you'll do fine on the next one."

2. One of your friends just found out that they didn't make it onto the school basketball team. They say to you, "I can't believe that I didn't make the team - this is so stupid!!!"

Validating response: "Man, of course you're upset, I know how hard you've been working for this! I'd be really hurt."

Invalidating response: "Just practice more next time, I bet that will help!"

Your Turn to Try!

3.

Validating response:

Invalidating response:

4.

Validating response:

Invalidating response: