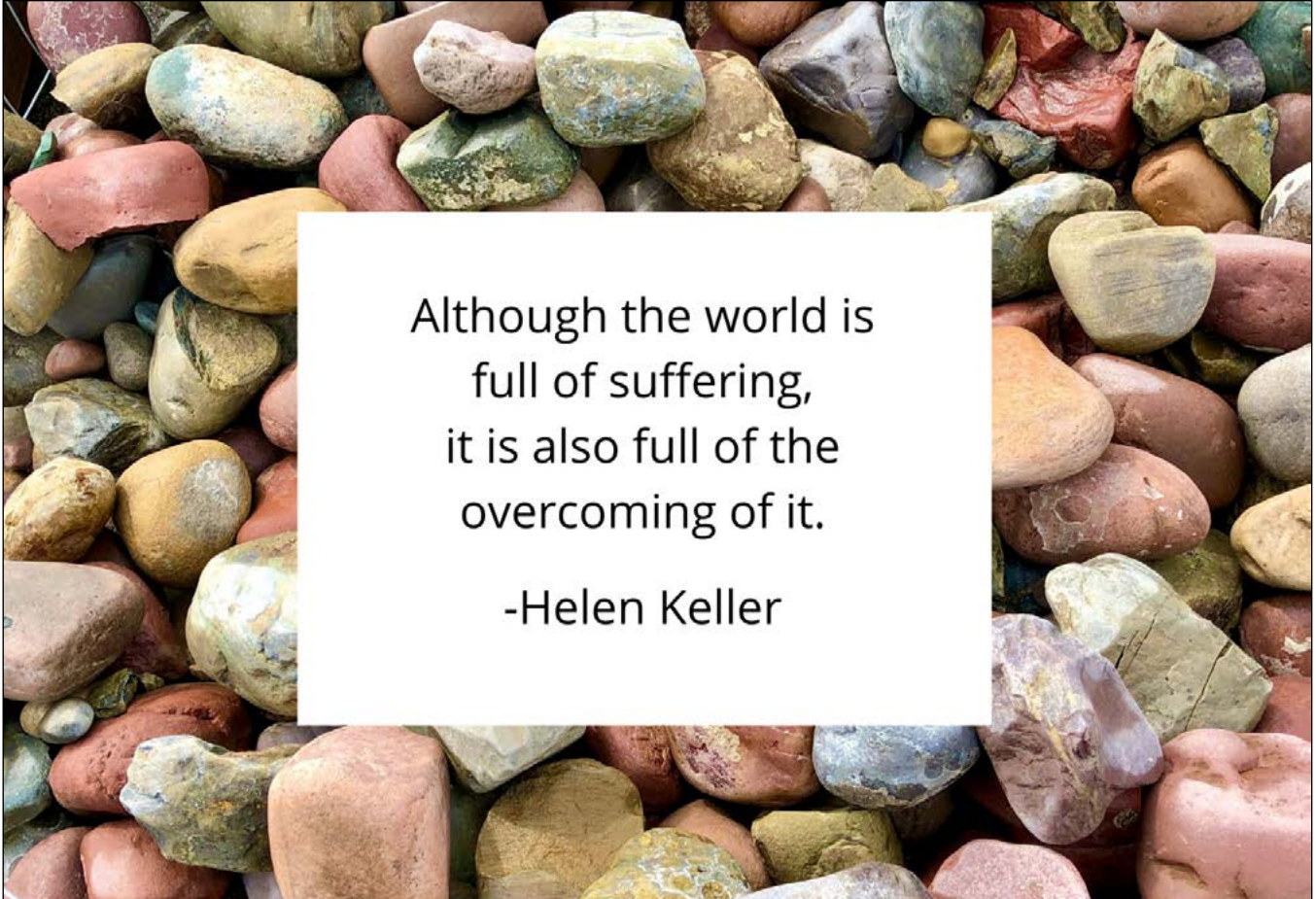


# Trauma-Informed Toolkit

## A Resource for Educators



Although the world is  
full of suffering,  
it is also full of the  
overcoming of it.  
-Helen Keller

Photo: Yasmeen Hossain, © Oregon State University

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# About this toolkit

## Purpose of this toolkit

The purpose of this toolkit is to support and complement educators' knowledge and skillset in trauma-informed approaches in education. It is just one resource in a wide variety of supports available to professionals in education as they embed trauma-informed practices. Educators and education professionals are highly encouraged to attend a corresponding workshop on trauma-informed approaches in education. It is offered by the Oregon Natural Resources Education Program (ONREP) throughout the year. This workshop provides opportunities for discussion, processing the information with peers and practicing hands-on approaches.

Please check [ONREP's website](#) for information on when the workshops will be offered.

This toolkit is not designed to be a substitute for seeking the guidance and advice of mental health professionals.

## Acknowledgements and disclaimers

You are invited to engage with this toolkit in whatever capacity is available to you. This toolkit uses examples of traumatic stress and traumatic experiences that may intersect with your personal experiences with trauma. As you explore this topic, you are encouraged to tune into your own well-being and take care of your needs. Please don't hesitate to reach out to others for support with this topic, such as colleagues, family members, friends, mental health professionals or community groups - whichever type of support structure resonates closely with you.

Trauma-informed practices in this toolkit are largely situated in the dominant culture of the U.S. This is by no means the only or best cultural way to engage with trauma-informed approaches, and for many it may be an inappropriate cultural lens. Please consider modifying the approaches in this toolkit to be culturally specific and appropriate for you, your learning setting and your students.

The author of this toolkit has a background working in the alternative trauma recovery and prevention field, utilizing creativity-based strategies to support children and adults processing traumatic stress. She has been working in the realm of PreK-12 education for many years as an educator, teacher-trainer, researcher and mentor, including providing trauma-informed interventions for students and professional development in trauma-informed care for educators and other school staff. The author is not a licensed mental health care provider. For support, guidance and advice please seek the counsel of a mental health care professional. This toolkit was peer-reviewed by educators, licensed school counselors and specialists in the field of educator professional development.

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## Introduction

*“Everyone in the classroom has a story that will lead to misbehavior or defiance. Nine times out of 10, this story will not make you angry. It will break your heart.”*

— *Annette Breaux*

Childhood trauma knows no bounds. Children of all backgrounds and identities are exposed to adverse experiences that can overwhelm their nervous system and ability to cope. For some children, this is a daily occurrence. Adults are also regularly affected by traumatic stress. The invisible and pervasive nature of trauma necessitates that we avoid making assumptions about anyone and apply empathy, care, flexibility and a trauma-resilient approach with everyone.

Recent events, including the COVID-19 pandemic, economic recession, increasingly severe impacts of climate change, political division and race-based social unrest (particularly caused by the continued killing of unarmed Black people highlighting historical traumas and systemic racism) has a high likelihood of causing traumatic stress for many. The stress can be compounded by other factors, such as marginalization, oppression, violence, addiction, and physical and mental disability, to name a few.

From a neurobiological aspect, the prevalence of traumatic stress affects students’ abilities to engage in the learning process, self-regulate, be attentive, retain information, and foster healthy relationships with their peers, educators, and school staff. Students can experience traumatic stress from different angles:

- Their home environment, neighborhood, community, or as a reaction to information gleaned from social media and news outlets or personal stories.
- Lessons in school, such as the history of colonization of Indigenous peoples in the US, kidnapping and enslavement, wildfire or climate change.
- School experiences, such as being othered, excluded or bullied.

While this paints a rather bleak outlook, there is hope! Embedding trauma-informed practices in educational settings can not only increase positive academic outcomes for students, it can also improve educator retention, reduce staff burn-out, improve relationships and foster resilience. Trauma-informed approaches endeavor to understand how traumatic experiences may have or still are impacting the lives of learners and use that understanding to accommodate the learner’s needs, prevent new or retraumatization, and foster resilience and growth. Trauma-informed education has a direct positive impact on everyone, regardless of their background or trauma history.

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*Embedding trauma-informed practices in educational settings can not only increase positive academic outcomes for students, it can also improve educator retention, reduce staff burn-out, improve relationships and foster resilience.*

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# What is trauma anyway?

“Trauma is a fact of life. It does not, however, have to be a life sentence.”

— Peter A. Levine

## An attempt to define it

Most definitions describe trauma as a wound to body, mind, spirit, or a combination of them, or all of them. The Substance Abuse and Mental Health Services Administration (SAMHSA) defines trauma as the adverse effects on a person’s mental, physical, social, emotional or spiritual well-being that often results from experiencing a harmful event or set of circumstances.<sup>ii</sup> Trauma in this context is not the event or circumstance itself (such as a car accident) but rather the effects the event or circumstance has on the person (such as anxiety or fear of driving).

## What is traumatic stress?

Traumatic stress or a ‘trauma stress response’ refers to a normal neurobiological response to adverse experiences or circumstances. This stress is experienced somatically, emotionally, psychologically and spiritually. It is a necessary survival

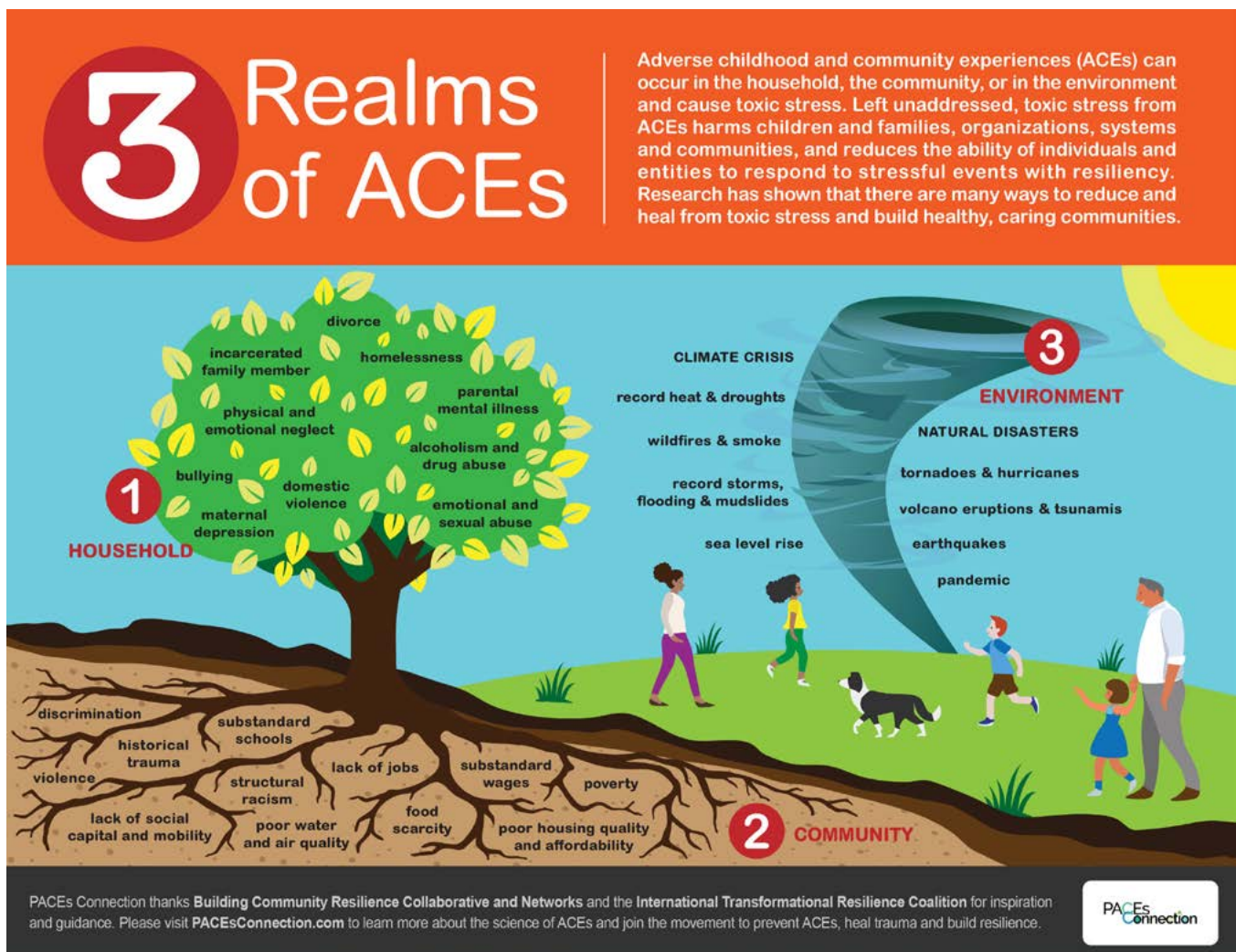


Figure 1: Three Realms of ACEs, © PACEs Connection

mechanism.<sup>iii</sup> Traumatic stress is commonly experienced as a result of a life-threatening or otherwise overwhelming experience<sup>iv</sup> that elicits the feeling of helplessness, hopelessness, terror and a loss of control. This is an automatic, neurological process unconscious to the individual. In a survival situation, we don't think cognitively about our reactions, we just react! Whether the event is actual or perceived, the trauma stress response elicits a nervous system reaction regardless of a person's awareness of the response or level of threat. For example, thunderstorms often feel like a life-threatening event to small children, even though their lives are most often not endangered. Their nervous system makes no distinction between a perceived threat and an actual threat to their physical wellbeing.

The Positive and Adverse Childhood Experiences (PACES) Connection groups adverse childhood and community experiences (ACEs) into three primary realms: Household, Environment and Community<sup>v</sup> (see Figure 1). The adverse experiences have a large disposition to cause traumatic stress affecting children, adults, organizations, systems and communities, and thus reducing resilience. But stressful events or circumstances don't always lead to long-term clinical trauma responses.<sup>ii,iii</sup> Two children might experience the same event, like the death of a grandparent, but experience it differently. One child could have a significant trauma response while the other experiences stress but develop symptoms consistent with a long-term trauma response. Stress is always part of a trauma response, but not all stressors become traumatic.

## Trauma resilience

Whether stress is experienced as traumatic depends on a variety of factors. These factors include the perceived or actual threat level, ability to draw on effective coping strategies, presence of supportive relationships, sociodemographics, trauma resilience and many others. Trauma resilience is the ability of a child or adult to cope, process and adapt to a traumatic event.<sup>vi</sup> The goal of trauma resilience is to help people experiencing adversity to either stay in a state of a regulated nervous system or return to a regulated state in a short period of time with minimal distress or affect on daily functioning. While having a temporary trauma stress response to an adverse experience is normal (and in most cases promotes survival such as our instinct to run when we encounter a bear), trauma resilience informs:

- How long the temporary dip affects daily functioning.
- What areas of life are affected.
- The level to which the daily functioning is affected.

For example, a student's response to a traumatic experience might affect school performance for a few days or it might affect it for months or even years. It might impact just school performance, or additionally peer relationships and the student's sleep cycle. As a very general rule of thumb, the faster someone bounces back, resumes daily functioning, and engages with healthy coping mechanisms for everyday stressors, the higher the person's trauma resilience.

Fostering and strengthening individual and community resilience is a component of trauma-informed strategies and tools. Resilience exists on a spectrum; any amount of resilience helps us cope, adapt and function. Resilience is coded into our DNA and is an innate part of all of us.<sup>vii</sup>

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*Stress is always part of a trauma response, but not all stressors become traumatic.*

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## Risk and protective factors

There are external, internal, biological, historic and systemic factors that can increase or decrease the likelihood of a person's trauma stress response,<sup>vi, viii, ix</sup> These factors influence how long the response will last and the degree to which it will affect the person's daily functioning. Some factors deteriorate their feeling of security, ability to thrive and control over life choices. These are generally considered risk factors. Some factors encourage stability, thriving, independence and safety. These are considered protective factors. Protective factors foster resilience. (See Figure 2 for examples of risk and protective factors.)

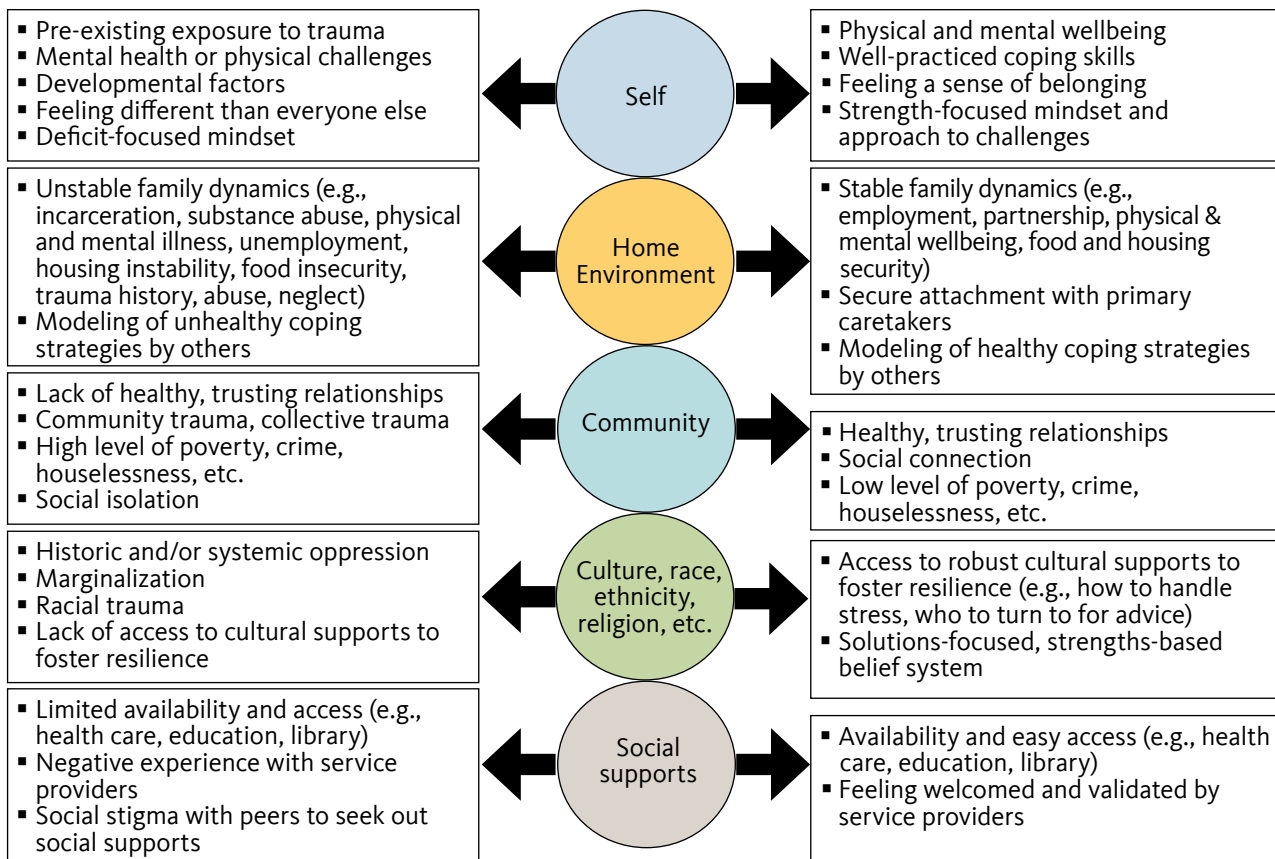


Figure 2: Trauma Risk & Protective Factors, author adapted from Rise Up Kansas.

## Types of traumatic stress

Traumatic stress is typically classified into three categories:

- **Acute trauma** — resulting from a single event, such as having to evacuate due to fire threat.
- **Chronic trauma** — resulting from a repeatedly occurring or prolonged event or circumstance, such as bullying or experiencing chronic poverty.
- **Complex trauma** — resulting from multiple and often diverse events or circumstances, such as having to evacuate due to fire threat, in addition to being bullied and experiencing chronic poverty.

In what context the traumatic stress is experienced can affect the response to it, the types of support available, and the understanding of it.<sup>x</sup> For example, does the adverse event or circumstance primarily affect an individual, or is it occurring in the context of a group or community? Does it affect a certain culture, race or even an entire geographic region (for example a natural disaster)?

### *Individual trauma*

Individual trauma refers to an event or circumstance that causes a trauma stress response that is experienced by an individual only. It can be acute, chronic or complex.

### *Collective trauma*

When more than one person or groups of people experience the same event or circumstance — such as natural disasters, wars, systemic racism, genocide — it can lead to a collective trauma response. According to Tulane University School of Social Work, collective trauma is an event or series of events that directly and negatively impacts the feeling of safety of a group or multiple groups of people.<sup>xi</sup> The traumatic stress response is experienced collectively and can affect and change the narrative, culture, and psyche of a group. The effects are often so wide-reaching that even members of the group who were not physically present for the overwhelming or life-threatening event experience a trauma response — either because the group they belong to was targeted and as such it affected their feeling of safety (for example, Holocaust), or because they internalize the experience of those who were physically present due to a sense of kinship and belonging to that community or group (for example, wildfires happening in someone's hometown even if they were not living in the hometown at the time).

Traumatic stress can leave behind a legacy for future generations. Transgenerational trauma, also called intergenerational trauma or ancestral trauma, affects younger generations in a few different ways:<sup>xii</sup>

- **Storytelling:** sharing lived stories with children, for example of war, enslavement, displacement of ancestors. The language used in telling these stories influences the impact on those hearing them. For example: how hope, grief, or devastation is expressed, how much and how often these feelings are discussed, and so on.
- **Imprints on familial culture:** traumatic experiences of grandparents or parents can influence familial culture and get passed down to children in a variety of ways: changes in family dynamics, parenting

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*The context in which traumatic stress is experienced can affect our response to it, the types of support available, and our understanding of it.*

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styles, added socioeconomic burden (if a parent becomes unemployed for example), long-term grief over losing a family member. Children can also be imprinted with beliefs rooted in traumatic experiences such as not feeling welcome or safe in a community or country, or learned beliefs from surviving a traumatic experience such as “don’t draw attention to yourself, it is dangerous” or “don’t waste food, tomorrow we might starve.”

- **Societal culture:** in the case of mass cultural and historical traumas, such as COVID-19, the entire culture of a society can be impacted and changed.
- **Neurobiological:** the traumatic stress the parent or grandparent experienced (and has not processed fully) may impact the way their nervous system responds to stress. They may have a much stronger reaction than would be expected to everyday stressors. This type of neurobiological response is modeled and passed on to children.
- **Genetic:** prolonged traumatic stress can leave a chemical mark on a person’s genes that alters the expression of the gene. This alteration can be passed down to genetic offspring. In other words, a person’s experience can alter the biology and behavior not only of themselves, but of the genetic make-up of their children, grandchildren and future generations.

### *Vicarious (secondary) trauma<sup>xii</sup>*

Vicarious trauma, also known as secondary trauma, can affect anyone who is closely connected to someone or multiple people experiencing a trauma response. They can be affected by listening to trauma victims recount their experience, reading reports, watching video footage or supporting the person. The secondary observer could be anyone, but caretakers, educators, health-care professionals, first responders or law enforcement officers are often exposed to actual or vicarious trauma. The same trauma risk factors and protective factors apply to vicarious trauma as to first-hand trauma; someone may have a higher likelihood of experiencing vicarious trauma if they have a trauma history, social isolation, lack of connection, unstable family dynamics, historic and/or systemic oppression, marginalization, a lack of professional and organizational support or a lack of professional training, and so on.

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*Traumatic stress can  
leave behind a legacy for  
future generations.*

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## Symptoms of trauma

*“Everyone’s internal alarm system is different. For some, it’s tension headaches, for others, it’s back pain.*

*“For you, it could be a rapid heartbeat.*

*“For everyone, it’s painful and exhausting.”*

— Dr. Mariel Buqué

Symptoms are a message for us that something isn’t right and requires our attention. A trauma response can lead to a wide variety of symptoms — from mental or emotional distress to physical symptoms or a combination.<sup>ii</sup> They can range from subtle to physically or mentally crippling. There are no fixed rules for when a symptom might appear or how long it will last. Trauma is unique to every individual. Symptoms can appear immediately after an event or take months or years to surface. Anecdotal stories from school districts impacted by the 2020 California wildfire season reported that students often did not exhibit symptoms of trauma until six months after the fires.<sup>xiv</sup>

Some of the common trauma symptoms could have a number of other causes, such as illness not related to a traumatic event. However, trauma symptoms typically do not resolve quickly or on their own — they are often experienced long-term, requiring specific attention, reflection, and conscious processing to be resolved.

How trauma symptoms show up in a person’s body, behavior, thoughts and reactions varies widely based on sociodemographics, historic experiences, genetic dispositions, learned behavior patterns, family dynamics, culture and community, and many other factors.<sup>ii,iii,iv</sup> They are influenced by age, developmental level and prior experiences. However, there is no hard and fast rules for this. A child or adult of any age could experience any of the following common symptoms either in isolation, in combination, or experience symptoms not on this list.

Trauma symptoms can include but are not limited to:<sup>xv, xvi, xvii</sup>

Preschool age	Elementary school age	Adolescence
Sleep disturbances — nightmares, difficulty falling asleep, fear of sleeping alone	Sleep disturbances — nightmares, difficulty falling asleep, fear of sleeping alone	Changes/disturbances to sleep — too much sleep or lack of sleep, changes to sleep cycle
Physical symptoms — chronic headache, stomachache, body pain	Physical symptoms — chronic headache, stomachache, body pain	Physical symptoms — chronic headaches, stomach aches, body pain
Behavior Regression — such as bed-wetting, thumb-sucking, clinging to caretakers, new or increased fears/phobias (such as of the dark), etc.	Persistent/excessive worry and concern over safety of self and others, engaging in unusually reckless or aggressive behavior & experiencing unusually strong emotions — irritability, aggressiveness, sadness, fear	Increased strong emotions — agitation, confrontation, depression, anger, grief, fear, concern
Loss of appetite or other changes to eating behavior	Constant retelling of the traumatic event or recreating it in play	Changes to eating behavior (loss of appetite or excessive consumption)
Fear of event (e.g., wildfire) recurring — fear triggered by reminders such as campfires, BBQ, candles, smoke unrelated to wildfires, fireworks, changes in weather	Lowered school performance — higher detention and suspension rates, falling behind peers developmentally, low academic achievement, higher referrals to special education services, difficulty with concentrating, memory or learning at school	School performance — decreased concentration, increased drop-out rates, falling behind peers developmentally, delinquent behavior
Excessive worry about safety of self or loved ones	Experiencing guilt or shame for their behavior during the event — what they did or didn’t do	Feeling guilt or shame over the traumatic event — can lead to self-destructive behavior
Withdrawal from activities and people they used to enjoy	Withdrawal from activities and people they used to enjoy	Feeling vulnerable and afraid of being labeled ‘abnormal’ due to their trauma symptoms

## Neurobiology of trauma explained

The human brain is a complex system. What follows is a simplification of trauma neurobiology. For a deeper dive, please see the resource guide at the end of this document.

There are a number of ways to break down the brain's components and how they function. For the purpose of talking about traumatic stress, it helps to divide the brain into three main components:<sup>xviii,xix</sup>

- 1. Hindbrain**, also known as the reptilian, primal or instinctual brain, is responsible for our survival and daily maintenance. It controls our instinctive reactions and involuntary responses, such as breathing, heart rate and digestion). This part of the brain reacts to external stimuli and determines whether we are physically safe. In Figure 3, the hindbrain is red.
- 2. Midbrain**, known as the mammalian, emotional or sensory brain, includes the limbic system. It regulates feelings, memory, creativity, and relating to others. It responds to stimuli and tells us whether we are loved. In Figure 3 the midbrain is orange.
- 3. Forebrain**, or human or primate brain, includes the neocortex. It is the thinking and rational brain. It is responsible for higher mental functions, such as reasoning, language, empathy, logic. This part of the brain wants to know what can be learned from stimuli being experienced. In Figure 3 the forebrain is yellow.

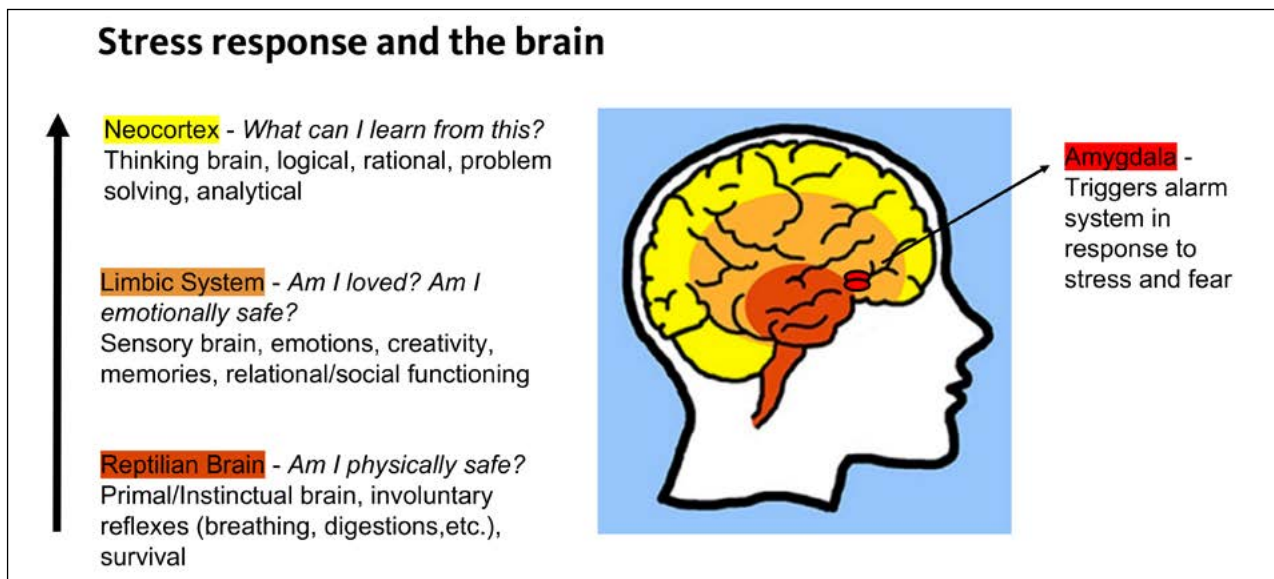


Figure 3: Stress Response and the Brain, Yasmeen Hossain © Oregon State University

When our senses perceive threat, the information travels from the bottom up, through the hindbrain first and the forebrain last (see Figure 3).<sup>xviii, xix, xx</sup> If the hindbrain or the midbrain determine there is a threat present, the amygdala sounds the alarm and our nervous system becomes dysregulated. In this context a dysregulated nervous system refers to an imbalance between the sympathetic nervous system (which activates our fight, flight, freeze or fawn response) and the parasympathetic nervous system (which activates our rest, digest, and restore response). See the next section “The how and why of nervous system regulation” for more information.

The amygdala is made up of a bilateral cluster of almond-shaped cells that are part of the limbic system (in the midbrain) that regulate emotions and help encode memories. It serves as an internal alarm system that triggers a survival response

when threat is perceived. In order to maximize our survival response — which is an instinctual and involuntary reflex when our alarm system is triggered — our brain disconnects access to our prefrontal cortex, including language processing.<sup>xx</sup> This part of the forebrain involves decision-making, problem-solving, self-control, language and higher reasoning (see Figure 4). This means that we do not get a chance to analyze a threat or external stimuli in our forebrain before the amygdala sounds the alarm and our survival response is triggered. In part, this is why we respond in the same neurobiological way to a perceived threat as we do to an actual threat.

As any good alarm system would, the amygdala wants to ensure we do not repeat any threatening situations in the future.<sup>iv,xxi,xx</sup> So it imprints a memory of the stimuli that triggered the alarm. However, this imprint exists as fractured parts, not as a whole story. This means it will record the sensations (such as a sound, smell, visual image), separately. This can lead to a sort of hijacking effect of our amygdala if we come across one or more of those stimuli memories without explicitly connecting it to a specific event by putting together the whole story. For example, if a certain song was playing on the radio at the time of a car accident, the amygdala might store the sound of that song as it related to the survival threat. The next time we hear that song, even if we are not in a car; the amygdala might sound the alarm and we might experience a stress response even though there is no threat to our survival present.

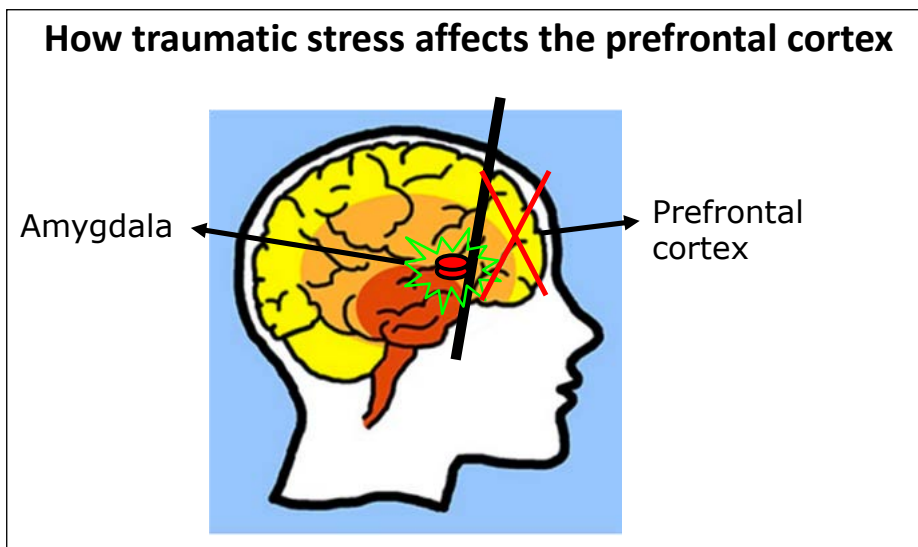


Figure 4: Traumatic Stress Affects the Prefrontal Cortex, Yasmeen Hossain © Oregon State University

## Types of trauma responses

Experts in the trauma field are not always in agreement as to how many trauma responses the human brain engages in or to what extent. Researchers have identified four responses:<sup>xxii,xxiii</sup>

- 1. Fight** — the brain prioritizes survival at any means, leading to anger, aggression, outbursts of temper.
- 2. Flight** — physical flight might look like distancing oneself from the stress — leaving the area, making one's body as small as possible, folding arms tightly, etc. If physical flight is not available, this response often triggers mental or emotional flight through being chronically

busy, overthinking, dissociation, obsessive behavior or inability to be still and relaxed.

3. **Freeze/immobilization** — feeling physically or mentally frozen and inactive, unable to make meaningful connections, withdrawal and isolation, difficulty making decisions.
4. **Submit/fawn** — people-pleasing, submitting to the wishes, demands or requests of others with no regard for self, forfeiting personal needs to accommodate others, unable to identify physical, emotional, mental needs and preferences, apologizing for self, needs, or for taking up space.

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*Bringing a dysregulated nervous system back into equilibrium or balance is a key component of trauma recovery.*

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## The how and why of nervous system regulation

When a trauma response is activated, the nervous system becomes dysregulated.<sup>xxiv</sup> It often follows either a state of:

- **Hyperarousal or activation:** The sympathetic nervous system controls the fight, flight, freeze or fawn response. Hyperarousal occurs when the sympathetic nervous system is overly active, leading to symptoms such as rapid shallow breathing, tense muscles, increased heart rate, inability to eat.
- **Hypoarousal:** The parasympathetic nervous system controls rest, digestion and restoration. Hypoarousal occurs when the parasympathetic nervous system is overly active, leading to symptoms such as depression, lethargy, fainting, “checking out” mentally and emotionally, a combination or all of these symptoms.

Both of these activations can lead to impaired wellness if prolonged. Bringing a dysregulated nervous system back into equilibrium or balance is a key component of trauma recovery.

Trauma is stored in multiple parts of the brain as well as in the form of somatic memory or body memory.<sup>iv,xxi</sup> Effectively processing and releasing traumatic stress must involve all parts of the brain — hindbrain, midbrain, forebrain — as well as the physical body to be comprehensive and have no lingering long-term effects. The way our nervous system can regain equilibrium after being activated is through dispersing the energy of overwhelming emotional states like fear or despair.<sup>xxv</sup> If this energy is not dispersed, it can remain trapped in our nervous system, constantly cycling through the experience of fear, helplessness, despair, etc. This can lead to post-traumatic stress disorder (PTSD).

Nonhuman animals have a built-in mechanism for dispersing tension and stress from their nervous system after a life-threatening event. Their bodies tremble, quake and shiver, and they take spontaneous deep breaths. This is a natural response that returns their nervous system to homeostasis. The example that Dr. Peter Levine, an expert in somatic trauma release, often uses is that of a gazelle.<sup>xxv</sup> If a gazelle is being chased by a lioness, the gazelle’s nervous system is activated for survival mode (for example flight). If the gazelle escapes the lioness and is out of physical danger, it will begin a period of shaking and quivering, often taking deep breaths until that energy is dispelled. This action helps regulate its nervous system by literally shaking off the trauma stress response immediately following the traumatic experience. In this manner, the gazelle suffers no long-term impairment by its neurological stress response. In general, animals do not develop PTSD because their instinctual behavior releases the trauma response soon after the traumatic experience and it doesn’t have a chance to get stuck.



Humans have a comparable mechanism for releasing a stress response.<sup>iv,xxv</sup> Instinctually, our bodies will shiver and quake after a stressful event, such as a car accident or after hearing distressing news, until the energy is dispersed and our nervous system is back in equilibrium. In Western culture, this dispersal is often suppressed out of fear of judgement by others due to individual or collective cultural conditioning about how someone ‘should’ react to stressful occurrences. We frequently feel an urge to strive to be stoic and not exhibit heightened emotions. Medical professionals may additionally perceive a need to prevent any physical injury that might result from quaking and shaking. However, if we allowed our bodies to shake off the stress, our nervous systems would be better for it!

In addition to physically shaking off a stress response, several other methods can be employed to help our bodies disperse energy from a trauma response and coax our nervous system back to equilibrium. These methods are often applied in complement to talk therapy — which engages the forebrain — to additionally engage the hindbrain and midbrain.<sup>xxi</sup> Complementary methods can include:

- Connection with nature and the outdoors.
- Connection with animals, such as equine therapy.
- Conscious breathing and breathwork.
- Body-based/felt-sense modalities such as yoga, martial arts, qigong, any mindful physical activity.
- Creative expression such as writing, acting, art and music.
- Psychotherapy techniques, such as eye movement desensitization and reprocessing (EMDR) and trauma-focused cognitive-behavioral therapy (CBT).
- Somatic therapy — a modality grounded in the mind-body connection.
- Mindfulness strategies.

## Neuroplasticity

Luckily, our brains are not static and unchangeable. Part of our survival and resilience gene coding is an ability for the malleable neurons in the brain to grow and change, also called neuroplasticity.<sup>xxvi,xxvii,xxviii</sup> This plasticity (or changeability) continues throughout life. This means if an activity is practiced over and over or a memory is accessed many times, we can create a new pathway in our brain. In time, this becomes the default pathway and it becomes easier to follow each time the activity is practiced or the memory called upon. The more frequently the pathway is stimulated, the stronger and more efficient the pathway becomes. If the behavior changes or the memory is no longer recalled, the pathway weakens and is eventually ‘deleted’ from the brain.

Neuroplasticity explains how a trauma response becomes habitual but also how it can provide a road map for how to eliminate a neural pathway that no longer serves us. Our neurons don’t know ‘right’ from ‘wrong.’ They simply follow the most frequented path, whether it is helpful or not, which can entrench anxious, obsessive or depressive patterns and thoughts.<sup>xxviii</sup> Neuroplasticity sets the foundation for us to learn new pathways, helping us overcome depression, addiction and other unhelpful patterns. An example of neuroplasticity is if a student is frequently told by adults that they are stupid, don’t have any skills, and won’t amount to anything in life, the student may create a neural pathway leading to feelings of unworthiness and incompetence that they will continue following for the rest of their life because it is a known and well-worn path. If

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*Neuroplasticity explains how a trauma response becomes habitual but also how it can provide a roadmap for how to eliminate a neural pathway that no longer serves us.*

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an adult supports the student with an intervention, highlighting the student's strengths, supporting the student to engage in activities they are good at, and telling the student they have a bright future ahead of them, this creates new neural pathways in the student's brain. The more often that pathway is reinforced and chosen by the student, the more habitual it will become. Eventually the old neural pathways of being told they won't amount to anything are deleted.

Through applying and repeating trauma-informed approaches, the brain creates new neural pathways over time, releasing any lingering traumatic stress and activated trauma responses.

## Key trauma understandings

**Trauma is pervasive:** Exposure to traumatic experiences is common and ubiquitous in societies worldwide. Trauma wounds are not commonly visible (like a broken arm) but there is rarely an individual who has not experienced traumatic stress in their life.

**Trauma is unique to each individual:** Everyone experiences events and circumstances differently, whether and how it manifests as traumatic stress is unique to each individual and there is a wide range in symptoms.

**Adverse experiences do not always lead to a trauma response:** Stress is always part of a trauma response, but all stressors do not always lead to a trauma response. It depends on a variety of factors, for example the ability to draw on effective coping strategies, past trauma history, historic and/or systemic oppression, marginalization, demographics, family culture, and other factors.

# The ins and outs of trauma-informed service delivery

*“Trauma is not what happens to you. Trauma is what happens inside you as a result of what happens to you.”*

— Dr. Gabor Maté

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*Trauma-informed care is an approach or a paradigm shift, not a checklist.*

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## So many terms! Trauma-informed, trauma-sensitive, trauma-specific

There are a number of different trauma-related terms. It’s easy to confuse them. Here is a primer on the three most common terms:<sup>xxix</sup>

### ■ Trauma-sensitive

- Awareness of the pervasiveness and impact of trauma on individuals and our society and how it might impact someone’s well-being.
- Being trauma-sensitive does not always include taking action.
- A trauma-sensitive approach differentiates between “what is wrong with you?” (victim blaming) and instead focuses on a “what happened to you?” (circumstances and events do not define you) approach.
- For example, you will likely be more trauma-sensitive after reading through this toolkit and become more knowledgeable about trauma and its causes and impacts.

### ■ Trauma-informed

- Taking a trauma-sensitive approach to life and putting it into action.
- Using knowledge of the impact trauma has and applying it to:
  - » Change personal behavior
  - » Update professional policies and practices
  - » Inform interactions with others
  - » Change systems whether on the micro or macro scale
- For example, if after reading through this toolkit you become inspired to put some or all of the strategies, tools and approaches into practice in your personal and/or professional capacity, you are trauma-informed.

### ■ Trauma-specific

- Therapeutic interventions focused on reducing symptoms, promoting trauma recovery and post-trauma growth.
- For example, mental health professionals utilize trauma-specific approaches with their patients.

## Trauma-informed care in education

Trauma-informed care (TIC) is an approach to providing care that is accessible and appropriate for anyone who has experienced, or is currently experiencing, traumatic stress.<sup>xxx</sup> The ‘trauma-sensitive’ term indicates that there is a baseline level of knowledge and awareness of the nature of trauma that must be present and a willingness to take action. Trauma-informed care does not aim to treat symptoms related to trauma but rather provides a framework that invites flexibility and empathy for those experiencing

traumatic stress. Trauma-informed care is often associated with learning environments and the educational field, though not exclusively. The Substance Abuse and Mental Health Services Association defines trauma-informed care as a strengths-based approach that is grounded in the understanding of and responsiveness to the impacts of trauma, creating opportunities for trauma survivors to rebuild a sense of control.<sup>xxxii</sup> Furthermore, it involves vigilance of institutional, systemic and individual policies and behavior to avoid retraumatization.

Educators who are embedding trauma-informed care in their professional capacity are invited to take into account the entire experience of a student, not just one lesson or one learning experience. For example, a student's entire day may involve; waking up, eating breakfast, commuting, arriving in the learning setting, being greeted, engaging in the lessons, recess and lunch activities, engaging with peers, dismissal and commute home, afternoon activities, evening meals, a variety of home routines and interactions, and bedtime. At any point during the student's day their nervous system might become dysregulated. While applying trauma-informed care in one or two of these segments of a student's day is significant and will make a difference, an approach that takes into account the whole students' day can have a higher potential to avoid retraumatization and support long-term student well-being. For an example see the box to the left.

Trauma-informed care is an approach or a paradigm shift, not a checklist. It is usually embedded in daily language, beliefs and attitudes. It recognizes the prevalence of trauma in all learning environments and strives to understand and create physically, emotionally, and mentally sound spaces for all learners including educators. A trauma-informed care approach focuses on progress not perfection. It's an ongoing journey, not a destination.

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*Trauma-informed care does not aim to treat symptoms related to trauma but rather provides a framework that invites flexibility and empathy for those experiencing traumatic stress.*

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## Helping students regain their footing

Tasha had a terrible night. Her parents were fighting well into the evening. She could hear them through her bedroom door. In the morning, her mother didn't get up to make her breakfast. To top it off, Tasha couldn't find her math folder and arrived at school late, hungry, tired, and stressed.

Tasha's teacher recently attended a trauma-informed care seminar and decided to implement some of the strategies she learned that take into account the whole student experience, including what happens before students even arrive at school and after they leave school.

On this morning Tasha very much appreciated the teacher starting the day with open time to engage in quiet reading, finishing up homework, or anything else students need to start their day off without feeling rushed. Tasha grabs a granola bar that the teacher puts out for hungry students and one of the spare math folders that are stocked in the classroom. During recess, Tasha retreats to the quiet corner and listens to music while hugging one of the stuffed animals. Her day continues with little supports built in, such as being guided through conscious breathing exercises before lunch, and a sharing circle that involved drawing how she felt. Tasha loves drawing!

By the time Tasha's school day was over, she felt calmer, grounded, and ready to go back home and face whatever fall-out there might be from her parents' big fight. The way the teacher built tools into the classroom routine mitigated both stress and trauma responses of students, even if the students, like Tasha, experienced stress before even arriving at school.

Equity and cultural responsiveness are crucial to trauma-informed care.<sup>xxxii,xxxiii</sup> Experiences of inequity, exclusion, discrimination, racism, macro- and/or microaggression can (and often do) cause traumatic stress. Applying trauma-informed care without equity and cultural responsiveness can cause retraumatization and do more harm than good. If an educator applying principles of trauma-informed care assumes there are no cultural differences within a classroom or between individuals and the same approach is applied to all, some students could feel excluded, or not seen or heard. They might perceive that their unique culture is misunderstood, disregarded, dismissed, a combination or all of the above.

Cultural responsiveness in this context refers to being aware of cultural factors that may inform a student’s goals, behaviors, language and outlook on life. It means responding to them in an appropriate manner by striving to create meaningful and relevant connections between the educational content being taught and the student’s culture.<sup>xxxiv</sup> Cultural responsiveness tends to the interpersonal connections between educator and students and student peers with humility — deferring to the student as the expert and approaching each student’s culture with a curiosity mindset.

Given that events and circumstances can impact people differently, considering cultural contexts and different pathways to recovery and healing is key for an effective trauma-informed approach. For example, offering trauma-informed care strategies and tools situated in the dominant white culture to someone from a culture that has intergenerational trauma stemming from white colonialism may cause retraumatization and have the opposite effect from what was intended.

## Who can provide trauma-informed care?

Trauma-informed care differs from trauma treatment or trauma-specific services, which (while often using a trauma-informed approach) refer to clinical interventions by health care professionals or other professionals working in the trauma recovery field.<sup>xxxv</sup> Trauma-informed care in this context refers to being knowledgeable about trauma and its impacts and changing policies, procedures, culture and behavior accordingly. Trauma-informed care can be provided by anyone who has the ability and willingness to educate themselves on this topic and apply it in their personal and professional lives. Trauma-informed care uses a nonjudgmental, empathic lens to view and interact with people experiencing traumatic stress. Since trauma is pervasive and not always outwardly visible, it is a lens through which we interact with anyone and everyone we come in contact with.

## Core pillars of trauma-informed care

Trauma-informed practices, specifically trauma-informed care, rests on a set of core pillars listed below in no particular order.<sup>ii, xxxv, xlii, x, xxxvi, xxxvii, xxxviii</sup> The list is not inclusive of all possible pillars of trauma-informed care. In the following section ‘Setting up the educational space’, examples are provided for how these pillars can be translated to an educational setting.

### *Acknowledgement*

Trauma-informed care realizes the widespread impact of trauma. Trauma is pervasive and unpredictable. Everyone experiences events and circumstances

*“We had a lot of trouble with western mental health workers who came here immediately after the genocide and we had to ask some of them to leave. They came and their practice did not involve being outside in the sun where you begin to feel better, there was no music or drumming to get your blood flowing again, there was no sense that everyone had taken the day off so that the entire community could come together to try to lift you up and bring you back to joy, there was no acknowledgement of the depression as something invasive and external that could actually be cast out again. Instead they would take people one at a time into these dingy little rooms and have them sit around for an hour or so and talk about bad things that had happened to them. We had to ask them to leave.”*

**~Anonymous man of Rwandan heritage**

*(as told to (and paraphrased) by author Andrew Solomon)*

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*Since trauma is pervasive and not always outwardly visible, trauma-informed care is a lens through which we interact with anyone and everyone we come in contact with.*

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differently. There are likely few people who have not felt the effects of traumatic stress in their life influenced by political divisiveness, impacts of extreme weather, economic recession, racism, poverty, peer victimization, community violence, neglect, abandonment, historical oppression, forced suppression of identity, unrecognized or unaccommodated learning or processing differences, chronic illness, death of a loved one (human or animal) and so on.

Trauma-informed care recognizes signs and symptoms of trauma in self and others, as well as the adverse impact the effects of trauma can have on health and well-being. Signs and symptoms vary by setting, age, gender, race, class, trauma risk factors and so on.

### *Relational trust*

Supportive, trusting relationships are one of the cornerstones of trauma recovery and trauma resilience. Trust in relationships can be built through open, honest and authentic communication and action, keeping one's word, following through on any actions or promises made, showing up, checking-in, and being a regular presence in someone else's life. Educators, peers, family members, friends, professional colleagues and acquaintances all have the potential to be a trusting, supportive relationship for someone else.

### *Voice, choice, agency*

Since traumatic stress is a response to feeling out of control, this perception can be counteracted by building in opportunities, language and actions to signal to a person or group that they have agency over their learning, their interaction with others, and their well-being; they have a choice, and their voice matters and will be heard.

### *Strength-based/solution-focused approach*

Trauma-informed care helps people focus on their strengths and solutions instead of deficits, shortcomings and challenges. This relates back to the neuroplasticity of our brain and creating new neural pathways for healing and recovery (see 'Neuroplasticity').

### *Resistant to retraumatization*

Retraumatization can occur if a person experiences a similar event, circumstance or pattern to the initial traumatic event. For example, a student who has experienced a traumatic separation from a loved one may be retraumatized by an unexpected separation from a trusted teacher or mentor. Recognizing common scenarios that might be retraumatizing and working to mitigate their effects is critical. One way this can be accomplished is by providing ample advance warning about a change to schedules or staffing and offering many opportunities for closure and goodbye rituals to assist the student in slowly processing the impending separation and giving the student agency over how they want to engage in saying goodbye.

### *Collaboration*

Connected to voice, choice, and agency — a collaborative environment shares power among the whole group, values different perspectives, and puts the group or person in charge of their own well-being. When addressing challenges, cocreating solutions or action plans is key. In an educational setting, making a learning plan collaboratively (including learning objectives) between educator and students is one approach, giving opportunities for

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*Supportive, trusting relationships are one of the cornerstones of trauma recovery and trauma resilience.*

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students to educate themselves and one-another, work in small groups, self-direct their learning, etc.

### *Empathy and compassionate resilience*

Empathy for self and others, validating other people's experiences and emotions, and normalizing individual responses to adversity are all important trauma-informed care tools. Practicing compassionate resilience is a form of self-care to avoid vicarious trauma, burn-out, and compassion fatigue.

### *Social justice*

Traumatic stress is often borne disproportionately by those who have been systemically marginalized based on their race, ethnicity, culture, socioeconomic background, gender, sexuality, ability, neurofunction, immigration status or language. Disregarding these facts when utilizing a trauma-informed care framework can cause new trauma or deepen existing traumatization.

### *Responsive care*

Embedding a trauma-informed approach into organizational culture through policies, procedures, and practices is essential to providing responsive care for staff, volunteers, participants, students, visitors, etc. These tools are most effective when all levels of an organization, school, or group have received comprehensive training on trauma-informed care.

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*Traumatic stress is often borne disproportionately by those who have been systemically marginalized based on their race, ethnicity, culture, socioeconomic background, gender, sexuality, ability, neurofunction, immigration status or language.*

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## Practical trauma-informed strategies and tools for educators

*“Avoiding your triggers isn’t healing. Healing happens when you’re triggered and you’re able to move through the pain, the patterns, and the story — and walk your way to a different ending.”*

— Vienna Pharaon

There are many ways that educators can implement and embed trauma-informed care when working with their students, students’ families and caretakers, colleagues and the community. Below, some practical strategies and tools are highlighted. This is not a comprehensive list. There is no limit or boundary to the myriad ways that trauma-informed approaches can be embedded in an educational setting and beyond.

### Care for educators

Care for educators is the most important component of a trauma-informed approach in education. Similar to the guidance on airplanes that, in the event of a change in cabin pressure, we should apply the oxygen mask to ourselves first before helping others, the educators’ intersection with trauma must be cared for before they will be able to successfully implement a trauma-informed approach with their students. This can be educators applying the principles, strategies and tools of trauma-informed care for themselves, as well as the community applying a trauma-informed care approach in interactions with their educators. There are times when self-care is not accessible for educators due to burn-out, exhaustion, experiencing a trauma response or physical illness. Especially during these circumstances, it is the community’s responsibility to step in and support and provide care for educators. After all, educators spend a large chunk of their waking hours with our younger generations, helping raise them by modeling behavior and imparting values, ethics and codes of conduct. Taking care of our educators is taking care of our future. Self-care and community care go hand-in-hand to achieve the same outcome: educators who experience well-being and have the resources and support they need to thrive in their professional and personal lives. An educator’s behavior, skills and well-being transfers directly to their students.

Educator self-care is subjective and based on the individual’s preferences, capacity, ability, likes and dislikes. There is no right or wrong way to practice self-care. What is important is the outcome of having a regulated nervous system. It could take the shape of any number of approaches. A first step is for educators to get to know their own nervous system — what causes activation, what helps regulate it, what is soothing in the moment, and what builds long-term resilience. With that knowledge, educators are better equipped to show up fully for their students and their community. Supporting students can be challenging if the educator’s nervous system is dysregulated — which could happen in the most unforeseen ways. Establishing a healthy self-care routine in one’s life can foster resilience by having an arsenal of tools and strategies to fall back on when confronted with unusual or overwhelming stress professionally or personally. Examples of trauma-informed care tools for educators:

- Conscious deep breathing, breath work, or meditation. These exercises or techniques regulate the nervous system.

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*There are times when self-care is not accessible for educators due to burn-out, exhaustion, experiencing a trauma response or physical illness. Especially during these circumstances, it is the community’s responsibility to step in and support and provide care for educators.*

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- Physical activity, such as running, yoga, strength training, walking or qigong.
- Creative expression, such as journaling, art, writing, music and cooking.
- Peer support, such as support groups, online forums and counseling.
- Creating and maintaining meaningful connections — building and drawing on supportive relationships with family, friends, romantic partner, social network or professional network.
- Establishing healthy boundaries between professional and personal life, especially as it concerns providing trauma-informed care for students and having spaciousness to take care of self and personal needs.

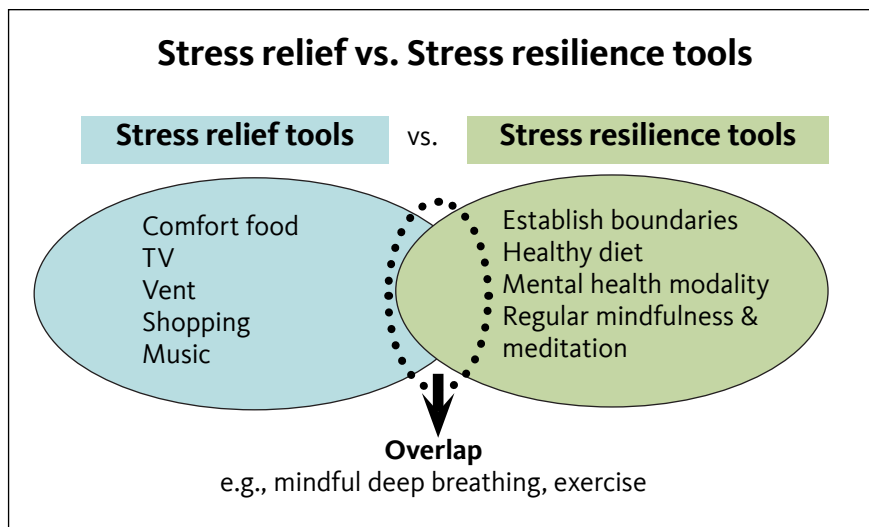


Figure 5: Stress Relief versus Stress Resilience Tools, author adapted from Ricky Robertson, Teach for Trust

There is a distinction between short-term, stress-relieving/soothing tools such as eating comfort food, escaping through TV, venting, or shopping — and long-term stress-resilience tools that build up the resilience muscle (see Figure 5). The duration, frequency, and type of activity often determines how it affects our nervous system and whether we only experience temporary relief or whether it builds up the resilience of our nervous system. Stress-resilience tools can include a healthy diet, regular exercise, mindfulness engagement, establishing healthy boundaries and engaging in such mental health care as nature-, art-, talk-, equine- or music-therapy. Some tools might be both a temporary soothing tool and at the same time a resilience building tool, such as engaging in deep breathing or physical exercise.

## Co-regulation

When a child or adult experiences an overwhelming stress response, their nervous system becomes dysregulated. Typically, there are three responses to this state:<sup>xxxix,xi</sup>

- The person stays stuck in this dysregulated state.
- They self-regulate.
- They co-regulate with one or more other people.

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*Co-regulation can include myriad ways to help regulate, such as through touch, verbal language, body language and modeling self-regulation skills.*

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Self-regulation is not always easily accessible, especially for people experiencing traumatic stress. This can be due to the trauma response continuously ringing the ‘alarm bell,’ leaving the person in a constant state of activation or dysregulation. This impairs the capacity of the brain to access self-regulation strategies.

Co-regulation can include myriad ways to help regulate, such as through touch, verbal language, body language and modeling self-regulation skills. Co-regulation considers that our brains contain mirror neurons — the brain cells that process the information we get from our senses and help us interpret the emotional state of the people in our surroundings. Mirror neurons inform us if there is imminent danger approaching by ‘watching’ to see if people in our vicinity are exhibiting signs of a dysregulated nervous system, such as tense muscles, rapid breathing, fast movement. Similarly, mirror neurons tell us when we can relax and calm down; they ‘see’ when people around us exhibit signs of a regulated nervous system, such as relaxed muscles, smiling and deep, slow breathing.

## Example of co-regulation steps

- 1. Self-awareness:** the educator tunes in to their own emotional state.
- 2. Self-regulation:** the educator applies tools/strategies to regulate their own nervous system if a state of dysregulation is detected (for example, deep breathing, jumping jacks, eating chocolate).
- 3. Nonverbal demeanor check:** before approaching the student, the educator pays attention to facial expressions, posture, and hand gestures to communicate the intended message (for example smiling, walking slowly, talking slowly, arms uncrossed with an open posture).
- 4. Modeling:** the educator practices emotional regulation tools in front of the student. The educator does not need to narrate this; simply doing it will often elicit an automatic mirror response from the student, such as taking a deep breath, yawning, relaxing shoulders or unclenching their jaw. In some situations, a narration could be useful. For example, they could say, “I am feeling tension in my shoulders. I need to stretch and take a deep breath.”
- 5. Invitation:** the educator asks the student if they would like to redirect their attention/energy by taking a sip of water, going for a walk or stepping outside — giving them spaciousness in a supportive way.
- 6. Validation:** if appropriate, the educator might validate and normalize the student’s emotions by saying something like, “That must be hard,” or “It makes sense if you are scared,” or “It is totally normal to react with anger in this situation.”
- 7. Sharing:** the educator shares with the student — either verbally or nonverbally — what they do to regulate their own nervous system and invite the student to join in the activity (modeling).
- 8. Joint problem-solving:** if appropriate at this time, the educator suggests jointly problem-solving, emphasizing a strength-based and solution-oriented approach and confirming that the student has agency and choice in their interaction with the educator. For example, if a student is worried about being bullied during recess, the educator might invite the student to brainstorm ways to manage the anxiety. Together they can come up with a plan that is feasible and doable — rather than the educator telling the student what they should be doing or feeling about the situation.



When a student’s trauma response becomes activated, it can be helpful for the educator to utilize co-regulation to assist the student in regulating their nervous system. For example, the educator might consciously use a soothing tone of voice, relaxed nonverbal cues and body gestures, empathetic and validating communication, silence when needed, modeling self-regulation and an invitation to practice joint problem-solving (as opposed to top-down orders or directions).

## Social-emotional learning (SEL)

Building in opportunities for social-emotional learning (SEL) in the learning setting, lesson plan or curriculum can lay important foundations for trauma-informed care and provide students and educators effective tools to address trauma. There is a lot of overlap between trauma-informed care and social-emotional learning. SEL intentionally fosters and provides students opportunities to practice social and emotional skills. The goal of SEL in education is to support the understanding and managing of emotions, setting and achieving positive goals, growing positive relationships, expressing empathy, and making responsible decisions through applying and practicing skills, knowledge and attitudes.<sup>xii</sup> As with trauma-informed care, SEL practiced without an understanding of equity and cultural responsiveness is vulnerable to retraumatizing or causing harm because it does not consider the range of worldviews or experiences of the students it is intended to serve. For more information on SEL, visit [casel.org](https://casel.org).

## Setting up the educational space

### *Inspiring (and aspiring to) safety*

There is no such thing as promising someone else a ‘safe’ space, because safety looks different for everyone. Unexpected events can happen at any time — a door could slam, an unforeseen visitor could enter, a smell could be present, a memory could resurface. Educators are all in different places in their journey toward recognizing how their individual biases, responses to stress, communication styles and ways of interacting with their world have an impact on their students’ feelings of safety. Which is why it is very difficult to promise safety or a space free of retraumatization. However, we can aspire to create trauma-informed spaces that take into account the principles of trauma-informed care. Considerations:

- Providing an advance schedule, rundown of the workshop/lecture/ school day so students know exactly what to expect. Students who are experiencing traumatic stress often find that having a routine, clear expectations and a sense of the space are useful tools to help their nervous system regulate. These may include:
  - Providing adequate personal space for each student around their desk or chair.
  - Orienting to and clearly marking bathrooms, drinking fountains and exits.
  - Discussing and jointly making a plan with students how to make decisions about regulating temperature, lights and the volume of music, videos or voices.
  - Displaying timers and clocks when possible so students can know when it is time to wrap up, break or switch to a new topic.

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*There is no such thing as promising someone else a ‘safe’ space, because safety looks different for everyone.*

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- Offering plenty of opportunity for movement and breaks to take care of needs.
- Encouraging students to take care of themselves. This provides them with agency over their well-being by allowing them to take stretch breaks, bathroom breaks and creative expression opportunities (like doodling or drawing while a teacher is talking) when needed — even if it isn't planned within the day's agenda. It also helps them learn how to make those choices without impacting the experience of others.
- Learning as much as possible about the student's personal life — culture, spoken language, family, home life, preferences, strengths, areas of academic improvement and physical and mental processing needs. For example:
  - Ask students to contribute classroom decorations that represent aspects of their heritage, culture or both. Provide books in different languages and about different ethnicities. Have daily quotes written in the first languages of all the students.
  - Invite students to share family histories and cultural heritage through stories, food, language, traditions, celebrations and milestones.
  - Open dialogue with parents and caretaker teams to get to know what their goals are for their children. Their goals might be different than the educator's goals for their students.
  - Translate newsletters and emails into languages student's parents are most comfortable in.
  - Take extra time to learn how to correctly pronounce names and greet each student with their name every time.
  - Set collaborative expectations that students have agency in creating (for example, raise hand to talk, don't use profanity, respect each others belongings, and so on). Use a restorative justice approach to resolving conflict when it does come up or when expectations are not met. You might say, for example, "What can we do to make this right?" Include expectations that the students have for the educator that they will hold themselves accountable to in turn.
- Strive to create an inclusive setting and provide multiple options to address diversity in physical needs — standing areas, sitting areas, opportunities to be active and activities to foster a calm and quiet body.

### *Self-regulation opportunities for students*

Offer and/or inquire when possible what students may need to self-regulate. Examples:

- Calming: provide soft plush toys, blankets and pillows, or headphones with nature sounds or calming music.
- Activating and releasing: Provide jumping ropes and other toys to get students to be active and dispel stress response energy from body, musical instruments, upbeat music, safe "deconstruction zone" where students can take things apart.
- Basic needs such as snacks, water, tissues, nap area.
- Fidget toys such as rubber bands, crayons, building blocks or other toys to keep hands occupied while the mind can focus on something else.
- Creative expression opportunities such as doodling, art, creative movement, singing, poetry.

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*Ask students to contribute classroom decorations that represent aspects of their heritage, culture or both. Provide books in different languages and about different ethnicities. Have daily quotes written in the first languages of all the students.*

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## *Voice, choice and agency*

Foster an environment — as appropriate — for students to feel like they have agency over their own learning, well-being and participation. Students experiencing traumatic stress may not always have access to the same ways of learning and participating as other students. This is why it can be very important to provide choices (for example, “You can write an essay or display the information as an art piece.”). Giving students agency over their own life helps them counteract feelings of helplessness and being out of control.

Inviting students to share how they are feeling, what they need, what works for them and what doesn’t shows them that their voice matters. It is also important that students have the space to share only as much personal information as they are comfortable by being given the option to opt out. Give them options for how they can participate in sensitive, personal or emotional activities, such as group discussions or reading aloud by giving them option to either share with the whole group or share one-to-one with a trusted peer, or invite them to journal, read to a stuffed animal, plant or pet, or create an art piece instead.

At the beginning of each day or lesson, the educator can model voice, choice and agency by sharing how the educator is feeling (whole person approach), including how their physical body is doing (for example, any discomfort they might be experiencing), their home life experiences, commute to school, their joys, hopes and fears.

### **An example of an educator check-in**

“Welcome students! Before we begin, I want to share with you that I slipped yesterday and hurt my ankle. Driving to school this morning was tough on my ankle, I’m in pain today. If you notice that I am not as upbeat as usual or seem a little distracted this is why. My hope for our time together today is that you can empathize with what it feels like when a body part hurts and extend a little extra patience and kindness towards me. Thank you!”

To the extent possible, the educator can also extend grace to the students to engage in their learning in whatever capacity is available to them at that moment — asking them in turn to extend that same grace to the educators themselves. This recognizes that difficult days or bad experiences don’t define a person or their intent, and everyone has moments where they need support and grace from those around them. Meeting students “where they are at” and modeling taking space for oneself when needed can be an effective trauma-informed strategy.

## *Collaboration*

Collaboration is directly linked to providing the opportunity for students to have agency and choices over their learning and signaling that there is shared power in a learning environment.

- Shared leadership can be a great tool and opportunity for this. For example, ask students to cocreate the schedule and learning objectives, present information to each other or to the educator (flipped classroom approach), or decide how they want to engage with the topic or when they want to take a break.
- Provide learning materials in multiple formats, such as books, videos, hands-on activities and hand-outs.

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*Students experiencing traumatic stress may not always have access to the same ways of learning and participating as other students.*

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*Collaboration is directly linked to providing the opportunity for students to have agency and choices over their learning and signaling that there is shared power in a learning environment.*

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- Cocreate classroom expectations and engage students in a restorative justice approach when agreements are not met (for example, “How can we make this right?”).
- Model collaborative decision-making and troubleshooting.
- Educators learn from students and alongside students as much as students learn from and alongside educators!

## Processing opportunities

Providing students opportunities to process stress or other overwhelming emotions as soon as possible after an adverse event or at regular intervals during a learning session can not only prevent long-term traumatic stress but, in some instances, interrupt the trauma response completely. Keep in mind that it may occasionally happen that students need to spend more (if not all) of the lesson time processing. If this happens, know that the students successfully met their own learning objectives for the lesson — which in this instance may have been to process their emotions/thoughts/lived experiences — and that makes it a successful lesson even if the lesson’s objectives from the educator’s point of view were not met. There are ways for educators to facilitate processing without needing to dive into trauma-specific therapeutic practices or be a licensed healthcare professional. Have resources available to refer students to a healthcare professional if needed.

### *Physical processing*

An innate response to overwhelming stress is to move our physical body in order to disperse the energy and regulate the nervous system (see ‘Bringing the nervous system back into balance’ above). Many have observed this in nonhuman animals when they get the ‘zoomies’ or shake and quiver to regulate their emotions. Humans can benefit from this as well, especially children who may not yet have the verbal or developmental capacity to communicate their emotions and needs. Some ideas for physical processing in an educational setting are:

- Build in breaks for physical activities (jumping jacks, jump rope, tag or yoga).
- Incorporate acting or drama, such as creating scenarios highlighting resilience, resolution and overcoming obstacles for students to act out.
- Guide students in grounding exercises, such as deep breaths, stomping feet, hugging trees, walking barefoot outside, wiggling their toes or gently tapping their legs.
- Ask students what activity their body wants them to do — our bodies are our best guide! Invite different students to take turns leading the group in movement.

### *Creative processing*

It can be hard for children (and adults) to describe what they feel or think about an event or circumstance. Expressing it through creative means is often a good alternative. The common neurobiological reaction to traumatic stress is for the body to shut down the prefrontal cortex — the part of the brain that controls language, reasoning and logical thought. As such, verbal processing may not always be accessible. The creative brain (the limbic system housed in the midbrain), however, can often still be engaged.

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*The common neurobiological reaction to traumatic stress is for the body to shut down the prefrontal cortex — the part of the brain that controls language, reasoning and logical thought. As such, verbal processing may not always be accessible. The creative brain (the limbic system housed in the midbrain), however, can often still be engaged.*

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Opportunities for creative expression about a certain topic could be provided by the educator in two ways: (1) give a specific prompt addressing the event or stressful circumstance (for example, “How do you feel about wildfires?”) or (2) support abstract or free expression. Research has shown that all creative expression can help the brain process trauma even if it doesn’t directly address the source of the trauma.<sup>xxi, iv</sup> Some ideas for creative processing:

- **Art:** Give prompts, free expression or guided art activity.
- **Dance or movement:** Guided or free expression, use bodies to make sculptures that express how grief looks for example..
- **Music:** Use instruments or singing or explore creating an instrument out of the body (clapping, slapping knees, sounds with mouth) and use it to express emotions and thoughts through sound.
- **Writing or poetry:** Journaling, composing poems, creative writing, storytelling.
- **Visualization:** Guide or ask students to guide each other through imagining a scenario, solution or outcome.

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*Instead of asking students “what went wrong?” or “what is the problem?” ask them “what did you do well?” or “what went well?” or “what do you think the solution is or the best possible outcome?”*

---

### Verbal processing

Most often there are situations where you don’t have to be a licensed therapist to use verbal processing in an educational setting. There are numerous SEL activities and other trauma-informed approaches that can be used for students to express their emotions and thoughts. The first step in verbal processing

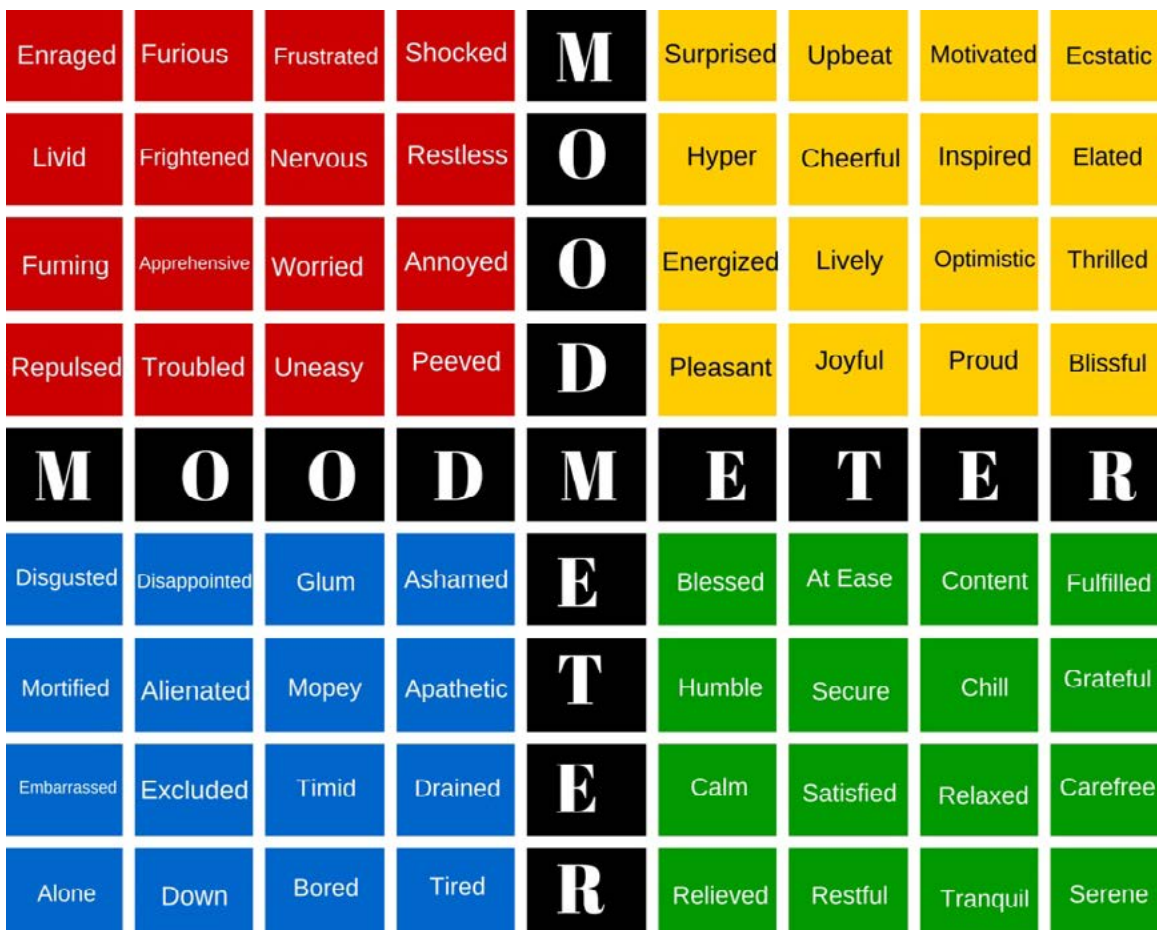


Figure 6: Example of a Mood Meter, Source: [Weebly.com](http://Weebly.com)

is for the student to identify the feeling or thought; this is a valuable skill to have. (It is hard to fix something we don't know is not working!) Remember to use a strengths-based or solutions-focused approach to verbal processing. For example, instead of asking students, "What went wrong?" or "What is the problem?" ask them "What did you do well?" or "What went well?" or "What do you think the solution is or the best possible outcome?" Some ideas for verbal processing with students include:

- Emotional check-in and check-out. For example, have students give their emotional weather report, describe what animal or color they are and why, or use a mood meter (see Figure 6).
- Pair-share.
- Storytelling. Even fictional stories will likely include reflections of real-life emotions, experiences and circumstances.
- Sound out the emotion they are feeling. For example, they might make a high-pitched shriek, a low guttural sound or a steady hum.



## Putting it into practice: Applying a trauma-informed lens to a lesson plan

*“I am only one, but still I am one. I cannot do everything, but still I can do something and because I cannot do everything, I will not refuse to do something I can do.”*

— Edward Everett Hale

While some lessons, such as a lesson plan on fire or climate change, may have a higher propensity to cause traumatic stress for students and educators, there is no rule for knowing what a student or educator may find stressful or what may activate their nervous system. For this reason, you can apply a trauma-informed approach to all lessons and interactions with students, student and educator families, colleagues and the wider community. Using a trauma-informed lens in as many settings as possible helps you build confidence in your skills around trauma-informed care. It also sets up a routine for students that proactively and reactively tends to any incidents of higher levels of stress that they inevitably experience at some point. Traumatic stress is often not visible the way a physical injury is, like a broken arm. That’s why trauma-informed care acknowledges that anyone could be experiencing traumatic stress at any time, without others knowing about it.

We will use Project Learning Tree’s *Living with Fire* lesson plan as an example of how an educator could apply a trauma-informed lens to their instruction. The lesson plan is geared towards sixth- through eighth-grade students. It explores the three elements fire needs to burn (the fire triangle) and how it relates to preventing and managing wildland fires. Project Learning Tree (PLT) is an award-winning national organization that provides PreK-12 instructional materials and educator professional development using trees and forests as windows on the world to increase student’s understanding of the environment ([www.plt.org](http://www.plt.org)).<sup>xliii</sup>

A lesson on fire has a higher-than-average likelihood of nervous system dysregulation for educators and students due to:

- **Direct experience with fire.** Students or educators may have lost their home, possessions or livelihood to fire. Their physical well-being may have been threatened by fire.
- **Indirect experience with fire.** Students or educators may have family, friends, or community members affected by fire. They may have heard stories of loss and danger from fire through media or personal stories.
- **Similar circumstances unrelated to fire.** Students or educators may have experienced houselessness, or faced death or physical injury due to other natural hazards. They may have lost material belongings through theft.
- **Learning about fire in the moment and the threat it poses to human and animal life.**

The source of stress often doesn’t matter. What is most important is to utilize tools, strategies and information to increase the nervous system capacity to cope with any stress that may arise before, during or after the lesson.

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*Using a trauma-informed lens in as many settings as possible helps you build confidence in your skills around trauma-informed care. It also sets up a routine for students that proactively and reactively tends to any incidents of higher levels of stress that they inevitably experience at some point.*

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Below are examples, suggestions, and ideas for how an educator can adapt *Living With Fire* to embed trauma-informed approaches. A lot of the examples could be incorporated routinely into all lessons or learning schedules and are not specific to this lesson plan or any lesson topic. The goal of this example is not to heavily modify the lesson or activities but to make easy adaptations to an existing lesson plan that utilize a trauma-informed lens.

There is no one right way to apply a trauma-informed lens to a lesson. The below example is merely one possibility out of many. Educators are encouraged to use their creativity, empathy, intuition, knowledge, personal lived experiences and imagination to embed trauma-informed care with their students.

Excerpts of the Project Learning Tree lesson *Living With Fire* are shared throughout this section, along with suggestions for modifications, adaptations to each section, or both. The entire lesson plan including annotations for how an educator might apply a trauma-informed lens as described below can be found in Appendix I.

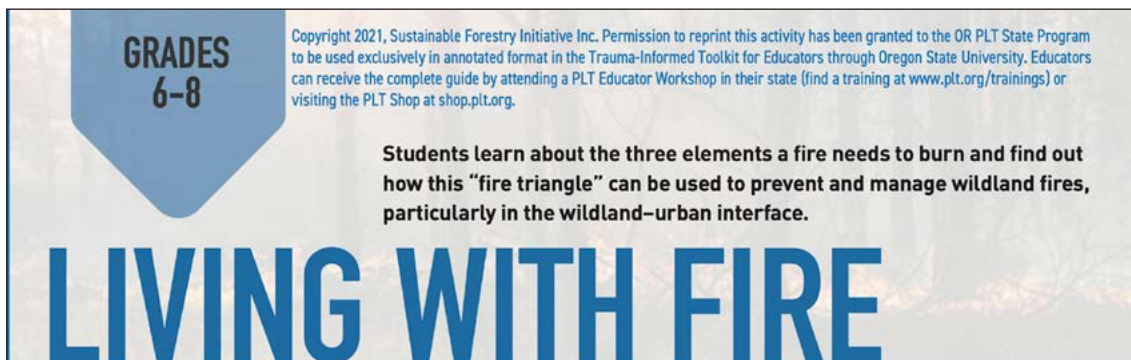


Figure 7: Project Learning Tree’s Living With Fire Lesson Plan © Sustainable Forestry Initiative, Inc.

## Before the lesson

### Educators

#### 1.1 Checking-in with and regulating nervous system

- Acknowledge that the fire lesson can impact the educator as much as the students. Educators may have previous experience with fire. They may know someone who has been impacted by fire, experience stress about future impacts of fire, or both.
- Practice strategies and tools that help regulate the educator’s nervous system before the lesson:
  - Before reading through the lesson plan.
  - Before, during and after reading the lesson plan and preparing the activities.
  - On the day of the lesson.
- Tune in to what works best for the individual. Some examples might be: yoga, morning walk or workout, meditation, wearing comfortable clothes, eating high-protein foods, having a call with a trusted person lined up for before and after, conscious breathing exercises and comfort food.

## 1.2 Collaboratively creating learning objectives (see Figure 8)

### **OBJECTIVES**

Students will

Add experiential & student objectives, see 1.2

- Describe the three elements of the fire triangle and explain how eliminating one (or more) can help prevent or control a fire.
- Describe ways to reduce the fire risk to homes in the wildland–urban interface.

Figure 8: Living With Fire Excerpt – Objectives © Sustainable Forestry Initiative, Inc.

- Add experiential objectives to the lesson. Experiential objectives are the lesson’s impact on the learner’s emotions, such as:
  - Students are invited to express and process feelings about fire.
  - Students are encouraged to explore their own observations about fire behavior and how it makes them feel.
  - Students are invited to reflect and share (if desired) how fire may have impacted them, their home or loved ones. Or they could reflect on any future risks.
- Ask students to add their own learning objectives for this lesson. Their objectives may be different from the lesson’s or educator’s objectives. All are valid! Collaboratively creating objectives shares power and gives students agency over their learning experience. Consider evaluating students not only based on their achievement of the lesson’s objectives but also on whether the students have achieved their objectives.

### 1.3 Setting learning expectations

- Acknowledge that students are showing up to the learning experience as their whole selves. There is no judgment if a student finds this lesson challenging or uncomfortable. In fact, let students know that it is normal to feel a level of discomfort about this topic.
- Invite students to talk to the educator or other support staff in advance about any concerns or questions they may have. Let them all know that the educator is aware that the topic of fire can be difficult to sit with and that the educator will build in a variety of opportunities before, during and after the lesson for them to process anxiety or stress, take a break, and/or take care of other needs.
- Let students know in advance what they will see or do during the lesson. Remember to include a solution-focused lens (such as how the fires will be extinguished after the activity).
  - Expectations:
    - » There will be pictures and a video depicting fire. Best practice is not to show houses on fire or photos of humans or animals getting hurt. If you follow this recommendation, let students know no such photos or videos will be shown in advance.
    - » Students will use matches to light a birthday candle as part of an experiment. The candle will be extinguished at the end of the experiment.

- » The educator will light fires in five metal containers as part of an experiment and will put them out immediately after the activity. Students will be observers only during this investigation.
- » Everyone handling the fires will wear safety equipment. Keep a fire extinguisher handy. If there are other adults present to assist, mention that to the students.
- » Students will be invited to research or discuss fire risk to humans and human settlements, ways to reduce fire risk to homes in their community or any other community of their choosing, including fictional ones.
- » Add experiential expectation:
  - \* Students will be invited to reflect on their feelings about fire, and how it might affect their community. Reflection options may include choices between individual activities like silent journaling or drawing, or sharing activities like small group discussions or one-on-one conversations with another student.
- Invite students in advance to bring anything to class on the day of the lesson that will help them feel comfortable: fidget toys, snacks, drinks, doodling equipment, stuffed animals, comfortable clothing or other items of comfort that won't be disruptive to others.

*Students, families/caregiver(s), relevant school staff*

## 1.4 Giving advance notice

### *Students*

- Let students know at least one week in advance that you will be sharing a lesson on fire. Remind them the day before.
- Share the purpose and objectives of the lesson. Let students know why you decided to share this lesson with them, explaining:
  - How this lesson benefits the students and why they might want to engage with it.
  - How it may build their skills or understanding of fire.
  - How it might contribute to building their resilience to learning about difficult topics, such as fire.
  - How it's an opportunity for them to practice nervous system regulation if they experience stress or anxiety before, during and after the lesson.
- Let students know how you and the school staff will support them and provide them with opportunities to process the content.
- Give examples of how students will be in charge of their own learning experience throughout the lesson.

### *Families/caregiver(s)*

- Inform families and caregiver(s) that their student will be encouraged to participate in a lesson on fire. Let them know the dates of the lesson, a rough outline of the lesson, and important details:
  - There will be pictures and a video depicting fire. If you decide not to show houses on fire or humans or animals getting hurt, let them know.
  - Students will use matches to light a birthday candle as part of an experiment. The candle will be extinguished at the end of the experiment.

- The educator will light fires in five metal containers and will put them out immediately after the activity. Students will only observe this part of the investigation.
  - Everyone handling the fires will be wearing safety equipment and there will be a fire extinguisher on hand. If other adults will assist, mention that as well.
  - Students will be invited to research/discuss fire risk to humans and human settlements and ways to reduce fire risk to homes in their community or any other community of their choosing, including fantasy ones.
  - Students will be invited to reflect on their feelings about fire and how it might affect their community. Reflection options may include choices between individual activities like silent journaling or drawing, or sharing activities like small group discussions or one-on-one conversations with another student.
- Proactively offer family members/caregiver(s) an opportunity to talk to the educator or relevant school staff if they have any concerns about their student in regard to this topic (either before or after the lesson)
  - Provide family members/caregiver(s) resources for building their own knowledge on trauma (see “Resources”).
  - Communicate with family members/caregiver(s) in a manner that is appropriate and responsive to their culture. For example:
    - Email, phone call, letter, or text (this information on their preference might be useful to gather at the beginning of the school year).
    - Address any language barriers.
    - Provide opportunities to get in touch with educator, relevant school staff, or both, that meets the schedule requirements of the families and caregiver(s)
  - See Appendix II for a letter template that educators can modify and adapt based on their needs

### *Relevant school staff*

- Inform appropriate and relevant school staff (such as the school counselor, homeroom teacher or principal) that you will be taking students through a lesson on fire and let them know the lesson dates and outline (see outline above under “Families/Caregiver(s)”).
- Let them know that you have informed the students’ families and caregiver(s) and offered them an opportunity to talk to the educator or relevant school staff if they have any concerns about their student in regard to this topic (either before or after the lesson).
- Let the school staff know that the students may be reaching out to them.
- See Appendix III for a letter template that educators can modify and adapt based on their needs

### *Guest speakers/volunteers*

#### **1.5 Considerations for inviting guest speakers or volunteers**

- Guest speaker:
  - To foster cultural diversity and responsiveness, consider inviting a guest from a different culture or background than your own, keeping in mind that many BIPOC people are often called upon to be a representative

for all who share their identity, which can be an exhausting and time-consuming task. If they have the capacity to be a guest speaker, plan to offer compensation for their time and expertise if you can.

- Consider including in the definition of “forest fire management professional” people with diverse backgrounds, such as a Tribal member who has extensive knowledge in cultural fire management practices.
  - Invite guest speaker to share only solution-focused examples of fires that have been contained or eliminated and be explicit with students that those fires are no longer active.
  - Encourage the guest speaker to share with students if they feel stressed or anxious about fires and how they manage their emotions.
- If you invite a guest speaker or any volunteers to support this lesson plan, give them information in advance on how they can support a trauma-informed learning environment.

## Day of the lesson

### *Physical, mental and emotional space*

#### 2.1 Preparation of physical space and nervous system

- Educator is encouraged to engage in activities to regulate their nervous system prior to interacting with the students. Use deep conscious breathing, exercise or mindfulness (see 1.1).
- If possible, create a calming area in the classroom with sensory tools — music with headphones, soft things, puzzles, fidget toys and materials for creative expression. Invite students to retreat to this space during the lesson or after the lesson.
- If applicable, arrange the classroom in a circle for inclusiveness, power sharing and collaboration.
- Create personal space around each student desk or chair so they can have spaciousness and not feel crowded.
- Before the lesson, encourage students to regulate their nervous system with a physical activity (jumping jacks, tag, workout circuit in the learning space), yoga, an art activity, play soothing music or recess with high-protein snacks.

### *Setting-up the lesson*

#### 2.2 Orientation to the space

- Allow students the opportunity to orient themselves to the space they are in, bringing their body, mind and emotions to the present moment (mindfulness), and assessing their physical, emotional and mental safety in this moment. If students feel safe (based on what safe means to them) at the beginning of the lesson, their nervous system will be able to start the lesson from a more relaxed and calm baseline.
  - Invite students to get settled and look around themselves (360 degrees).
  - Encourage them to take note of what they see, hear, smell, taste and feel.
  - Ask students to reflect upon what helps them feel safe in their classroom, school, community and out in the larger world.
    - » If there is something within the educator’s control that would support a student to feel safer — do it.



- \* Invite students to look out the classroom windows and reflect upon the same questions as above.
- \* Invite students to reflect on what they saw or perceived coming to school this morning in the greater community (using same questions as above).
- \* Encourage students to take a deep, conscious breath to settle their body, mind and emotions into this moment and let go of anything that came before or comes after this moment. All that matters is the present moment.

## Physical safety precautions reminder

Preemptively inform students about the physical safety precautions of the classroom, school, and community as it relates to fire. For example:

- Show them the fire extinguisher and inform them you know how to use it. Remind students where the emergency exits are.
- Inform them that there are currently no active fires threatening the community (if that is the case).
- Show the safety equipment that the educator or volunteer will wear when conducting the activity (safety goggles, long-sleeved shirt, gloves, etc.).
- Describe any safety protocol for students during the fire activities (staying 6 feet away from the fire, etc.)

## 2.3 Expectations of participation

- Share with students that they are expected to participate in this lesson to the best of their ability, acknowledging that the students as well as the educator and any other adults helping out are showing up as their whole selves for this lesson, with their own experiences, stressors, hopes and needs. Invite students (and any other participants in the lesson) to take care of themselves and their needs throughout the lesson. This might look like taking a break, stepping away, getting a drink of water, doodling, or using their fidget toy. If being near active fire during the activity is too uncomfortable, they can look away, doodle, sit in the calming corner and put their head on their desk and close their eyes.

## 2.4 Normalize feelings

- Normalize that this lesson topic can bring up some uncomfortable feelings for anyone (children and adults alike), and that there is no judgment about this.
  - Share any uncomfortable feelings the educator may have about diving into this lesson. Share how the educator handles these feelings and practices emotional resilience. For example:
    - » “Hey everyone, I’m feeling a little anxious about this lesson we will be doing together because we haven’t talked about fire ecology before, and we will be using active fire for the activities. When I feel anxious it helps me to do a few jumping jacks to shake the anxiety out of my body. I am going to do some right now. Would anyone like to join me?”
    - » Let students know it is normal if they are feeling anxious, stressed, uncomfortable, or a combination about this lesson topic. Let them know why it is an important lesson even if it involves uncomfortable feelings.

## 2.5 Flexibility

- Approach the lesson with a flexible mindset. Be ready to change gears if needed. For example:
  - If the students don't complete the lesson because they want to process verbally or share their stories about fire and that takes up most of the time - know that the students met their own learning objectives. Which makes it a successful lesson, even if the students may not have met the lesson's objectives.
  - Assume everyone is doing the best they can. Some students may not have the capacity to participate fully or at all in the activities. Don't reprimand students, demand they participate or hand out punishments, as this could be retraumatizing for some. Allow students to have agency over their own learning experience and let them know that you trust them to do what is best for them.
- Meet students where they are at. Center the student in this lesson – their needs, their learning experience, their pace, and so on - not the lesson outcomes or the educator outcomes.

## 2.6 Self-regulation tools

- Share one or two tools with students for how they can calm down their nervous system during this lesson if they start to feel anxious or uncomfortable. For example:
  - Deep belly breath or any other breathing exercise that the educator can demonstrate.
  - Doodle.
  - Get a sip of water.
  - Look out the window and practice present moment awareness (See section 2.2).
  - Move to the calming space.
  - Use their fidget toy, stuffed animal or other comforting support they brought.

## 2.7 Voice, choice, agency reminders to include throughout the lesson

- **Language:** Use inviting language (I invite you to, I encourage you, you are welcome to ...) versus directive (you should, now you will, we will do this, you must ...)
- **Participation:** Provide options for how students can participate in this lesson, giving them agency over their own learning. For example, offer the choice of verbal sharing or quiet writing.
- **Emotional check-ins:** Utilize an emotional check-in tool at the beginning, end and throughout the lesson to see how students are feeling, if they need a break, are feeling overwhelmed, need to shift gears, or if they are OK to keep going. Consider using a mood meter (see Figure 6) or emotional weather report, or perhaps a thumbs up or thumbs down. Provide different methods for students to share how they are feeling with other students and the educator, and give them the option to opt out of sharing with others. Keep in mind not everyone may be able to share verbally or have the capacity to identify how they are feeling during the lesson. Other emotional check-in options include:

- Giving students an opportunity to share with educator anonymously, such as with a concern jar.
  - Creating time for journaling, silent reflection or pair share.
  - Providing the option to reflect on and write about their feelings at home versus during school.
- **Normalization and validation:** Normalize uncomfortable feelings about fire by sharing educator feelings about it and how educator manages them (model resilience and coping strategies). Then invite students to share their feelings.
    - Use normalizing language: it is totally normal to feel..., if I were in your shoes, I would also feel...
    - Use validating language: it makes total sense why you feel... you have had a scary experience.
  - **Breaks:** Build in plenty of opportunities to take a break from the content of the materials, for example quick stretch, jumping jacks, yoga pose, mindfulness activity, recess.
  - **Processing:** Build in plenty of opportunities for students to process what they are seeing/learning/feeling at multiple points throughout the lesson, for example:
    - Pair share, draw it, act it out, write poem about it, silent journaling, sound it out. It works well especially for emotions to have students act it out and make a sound representing what they are feeling since our brain does not easily have access to words when we are experiencing a traumatic stress response.

## During the lesson

### Background

#### **BACKGROUND** Check-in with & regulate nervous system, see 1.1

From an ecological standpoint, fire is neither “good” nor “bad.” Fire occurs naturally through lightning strikes in the presence of dry fuel. Fires also occur when humans start them, intentionally or accidentally.

Fire is a natural event in many forest ecosystems and can help to recycle nutrients back into the soil or help some plants regenerate. Fire is also an important component in the life cycle of several tree species: they need intense heat to open their cones and release seeds, and they thrive after a fire opens the forest canopy and allows more light to reach the ground.

Fires need heat, fuel, and oxygen to burn; these three elements are known as the “fire triangle.” Initially, the heat is provided by an ignition source such as lightning, matches, or sparks. Fuels include dry trees, dead trees and limbs, leaf litter, and dry grass. Oxygen is available in the air. If you remove any of the elements of the fire triangle, the fire will not burn.

Consider the human & emotional component to fire as well, and research fires that occurred locally, see 2.8

Wildland fires are also influenced by the “fire behavior triangle,” which includes other factors, particularly weather, fuel composition, and topography.

- Weather conditions have a great influence on when fires occur and how they spread. Sustained high temperatures and low humidity dry out forest debris, making the landscape more susceptible to fire. The stronger the winds, the more quickly moisture evaporates from the vegetation, and the faster fire can spread.
- Fuel composition, including moisture level, chemical makeup, and density, determines the degree of flammability.
- Topography, which describes an area’s slope and steepness and whether it has canyons, valleys, or rivers, determines how hot and dry an area is and how quickly a fire can spread.

To counteract feelings of loss of control, add how humans influence the fire triangle & fire behavior triangle, see 2.8

Figure 9: Living With Fire Excerpt – Background © Project Learning Tree

## 2.8 Human and emotional component to fire (validation and normalization of emotional reaction to fire) (see Figure 9)

- Fire-human interactions have been documented for many centuries. In recent years, humans have been confronted with fire more frequently, due to increased occurrence of, size, and intensity of fires - whether on wildland or in urban areas. It is natural for humans to experience heightened emotions surrounding this topic. That's because fire can affect basic human needs — shelter, food, water, physical safety and social connection.
- Solely focusing on the ecological aspects of fire and not talking about how humans contribute to fire behavior or fire season could instill a feeling of helplessness and having no control. Humans influence the fire triangle and fire behavior triangle. They do this by starting and suppressing fires, managing forests, altering topography and influencing weather through anthropogenic climate change. We each have some control over our influences on fire. Awareness of this, can restore a sense of control, which can be helpful in regulating traumatic stress.
- You can gauge students' experience with fire by researching local fires as part of the background information.

Historically, different regions of North America had distinct “fire seasons” when wildland fires were more likely to occur. Conditions such as earlier winter snow melt, drought, and tree mortality from insect infestation have extended the traditional fire season in many areas. Wildfires now sometimes occur year-round, forcing some forest managers to consider the “fire year” when making fire management decisions.

Fire has been an important tool in Indigenous cultures in North America and in other cultures around the world. Fire has traditionally been used to attract game animals by stimulating new growth, reducing populations of unwanted animals, fertilizing the soil to enhance crop growth, and clearing areas of forests. It has also been used as a management tool to bring back endangered species such as the Kirtland's warbler and the Karner blue butterfly.

Use present tense when describing Indigenous cultural practices, [see 2.9](#)

Highlight that Indigenous cultures have in the past and still practice today controlled, deliberate burns, [see 2.9](#)

Over the years, fire management techniques have shifted to an active management strategy. A **prescribed burn** (one that is lighted by trained fire personnel when prescribed fuel and weather conditions are right) can prepare a harvested area for reforestation, enhance wildlife habitat and berry production, protect native species, manage invasive species, or reduce future fire hazard by reducing burnable fuels. Prescribed burns can also be used to prevent the spread of wildfires and protect communities.

Figure 10: Living With Fire Excerpt – Background, Sustainable Forestry Initiative, Inc.



## 2.9 Indigenous fire management (see Figure 10)

- Use present tense when describing Indigenous cultural practices. Indigenous people are living and thriving in North America and around the world today.
- As they have in the past and still do today, Indigenous people practice controlled, deliberate burns to manage ecosystem health, maintain key habitats and reduce the risk of future catastrophic fires.
- Sharing historical and contemporary approaches to fire management highlights the continued relationships between Indigenous people and the land and respects the knowledge they have been building since time immemorial. It is also important for fostering cultural inclusiveness in a learning environment.

Expand on crown fires being extreme, to include what benefits might come from crown fires, [see 2.10](#)

### FOREST FACT

Closely spaced small trees and branches in the understory can act as ladders that allow fire to spread more easily into the upper canopy. The resulting “crown” fire can become extreme in certain forest types and weather conditions.



Figure 11: Living With Fire Excerpt – Forest Fact © Sustainable Forestry Initiative, Inc.

In the United States, the human population continues to grow from urban areas into outlying rural and wildland areas. This demographic change is increasing the extent of the wildland–urban interface, the area where human-built structures and development meet or intermingle with undeveloped wildlands.

As more homes and other buildings are constructed near forests and other wildland areas, there is an increased likelihood that wildfires will threaten both structures and people. Because fires can readily move between buildings and vegetative fuels, it is becoming more difficult to manage fires in the wildland–urban interface. Homes, property, and lives within the wildland–urban interface are increasingly threatened by wildfire, and preventing, controlling, and suppressing it remains a challenge.

Ultimately, healthy forests are resilient forests. In fire-adapted ecosystems, a healthy forest has openly spaced trees and underbrush, a mosaic of different size and aged patches of forests, and the regular presence of fire. By promoting healthy forests, forest managers help to reduce the risk of wildland fire and also prevent unwanted effects of fire.

Include solution-focused paragraph at the end (after the bleak forecast in 2nd to last paragraph), [see 2.10](#)

Figure 12: Living With Fire Excerpt – Background © Sustainable Forestry Initiative, Inc.

## 2.10 Solutions and strengths-based focus (see figures 11 and 12)

- **In the Forest Fact:** Expand on crown fires being extreme to include what benefits might come of it. For example, after a crown fire, birds use burned trees as nesting sites. The trees also provide homes for small mammals, and it is a base from which new plants can grow. If the burned tree decays, it enhances growth of other plants through releasing nutrients into the soil.
- After the bleak forecast in second-to-last paragraph, add that despite the increased risk of fire to humans, buildings and forest ecosystems, in recent years there have been many advances in effective fire prevention and management, such as new technology, increased government budgets for fire management, learning from and working with Indigenous communities on implementing prescribed burns, public education campaigns, community based proactive fire prevention programs (such as FireWise) and a host of cutting-edge research and tool development for public and private fire management.

### Getting ready

Educator might want to check-in with their nervous system as they prepare for the activities, if it feels dysregulated consider adapting the lesson plan and/or asking for help to make it manageable, [see 2.11](#)

#### GETTING READY

Take cultural inclusiveness into account when inviting guest speakers, and offer ways they can support a trauma-informed learning setting, [see 1.5](#)

##### PART A:

Gather materials for the investigation. Invite a local firefighter or forest fire management professional to visit your group.

##### PART B:

Set up five metal containers and fill each one halfway with the following fuels:

1. Different-sized live branches, leaves, and needles (all green).
2. Different-sized dead and dry branches, leaves, and needles.
3. Different-sized dead and damp branches, leaves, and needles (or a dry assortment that has been sprayed lightly with water).
4. Large-diameter fuels, such as branches or whole pieces of wood (not kindling).
5. Partially burned pieces, such as from a fireplace or campfire (used but not completely consumed).



**SAFETY CHECK!** Place metal containers outside on a fire-resistant surface (concrete, asphalt, or bare earth) away from cars, buildings, and dry vegetation. Be sure to have water and a fire extinguisher readily available. Ask another adult to assist with the demonstration, and wear safety goggles.

Figure 13: Living With Fire Excerpt – Getting Ready, © Sustainable Forestry Initiative, Inc.



## 2.11 Gathering materials and setting-up the investigation (see Figure 13)

- This might be a good place to check in with your nervous system as you prepare the materials for the activities. If anxiety or stress is present, ask for help to process emotions, share emotions with a trusted person, and practice nervous system regulation (see 1.1).
- If needed, adapt investigation to make it more manageable by scaling it down to small containers, asking a colleague or parent to conduct the activity instead of you, or ask for multiple volunteers to be present during this activity, or both. This would allow more care for students who are stressed or anxious and could alleviate some of your stress.

### Part A: Fire triangle

**DOING THE ACTIVITY**

Begin with a student emotional check-in, overview of schedule, and offer opportunities for nervous system regulation, [see 2.12 & 2.7](#)

**PART A: FIRE TRIANGLE**

1 Ask students, “What things do you think a fire needs to burn? What do you think happens if one of these things is missing?”

2 **HANDS-ON LEARNING** Divide the group into teams of 3–4 students. Provide each team with a birthday candle, modeling clay, a jar, a lid, and a set of matches.

3 Pass out copies of the Fire Triangle Investigation student page. Invite teams to conduct the investigation described and answer the questions.

4 When everyone is finished, ask the group what three things are needed for fire to burn. Draw a picture of the fire triangle where everyone can see it. [Insert processing break opportunity, if needed, see 2.7](#)

5 Have a local firefighter or forester talk with your group about the equipment and techniques used to put out fires, relating each technique to the fire triangle. Have them also discuss ways to prevent fires. Alternatively, share a video about techniques people use to fight wildland fires (see [pit.org/myk8guide](http://pit.org/myk8guide) for suggestions). [End with an emotional check-in & processing break, see 2.15 & 2.7](#)

Swap out directive language for invitational language in student worksheet (see Appendix I - Student Pages), and offer choices for how students can engage with this activity, [see 2.13](#)

Invite guest speaker to utilize trauma-informed strategies, [see 2.14](#)

Figure 14: Living With Fire Excerpt – Part A: Fire Triangle, © Sustainable Forestry Initiative, Inc.

## 2.12 To begin (see Figure 14)

- Do an emotional check-in. For example, ask students, “how do you feel today? How do you feel about doing a lesson on fire?”
  - Validate and normalize emotions students share.
  - Remind students to tune in to their emotional, mental and physical needs, and that they can step away and take care of their needs at any time.
- Invite all students to participate in a quick nervous system regulation activity before moving on, such as breathing exercise, jumping jacks, quiet reflection, yoga pose, and so on.
- Provide a full schedule overview of this lesson to let students know what to expect. This helps them feel more in control of their experience and not surprised by anything that could cause stress. It is important for educators to stick to this agenda for this reason. If the schedule needs to change, be as upfront as possible about the changes.

### 2.13 Student activity: Hands-on learning — birthday candle investigation (see Figure 14)

- Swap out directive language for invitational language in student worksheet.
- Provide students with a number of choices on how they can engage in this activity. This will give them agency and choice about what their capacity is to participate. For example:
  - Invite students to work individually, in teams of two, or small groups.
  - Encourage students to check in with themselves about which role they are most comfortable with (lighting the candle, being the scribe, etc.) and invite them not to judge each other for it; everyone is in a different place today and that is OK.
  - If a student does not have the capacity to participate, invite the student to complete an alternative activity, such as creating a drawing or other art piece about the fire triangle, conducting research about the fire triangle, etc. Meet the student where they are at.

### 2.14 Guest speaker or video (see Figure 14)

- Invite guest speaker to share only solution-focused examples of fires that have been contained or eliminated and be explicit with students that those fires are no longer active (deficit-focused versus solutions-focused).
- Encourage the guest speaker to share with students if/when they feel stressed or are anxious about fires and how they manage their emotions (model resilience strategies).
- If showing a video, photos or any other media, let students, families, caregiver(s) and school staff know in advance (prior to the day of the lesson). Inform students whether they will be seeing any homes burning, animals or humans getting hurt, or any other image that may cause stress (recommendation is not to show any of these images).

### 2.15 Emotional check-in (see Figure 14)

- For example, ask students, “How did that activity make you feel?”
  - Validate and normalize emotions students share.
  - Check to see if students are ready to keep going or need a longer break (with show of hands, thumbs up or down; can be done with students’ eyes closed so only the educator can see whose thumbs are up or down).

## Part B: The wildland-urban interface

Begin with emotional check-in (if not done consecutively with Part A), and provide detailed overview of investigation, jointly troubleshooting concerns that come up, [see 2.16](#)

### PART B: THE WILDLAND-URBAN INTERFACE

- 1 As city populations expand, the urban boundary expands into wildland areas. This means that more and more people are building homes in woodland and grassland areas. Ask:
  - What might be the risks in living next to or within wildland areas?
  - How might people reduce the risk of fire in these wildland–urban interfaces?
  - How might the type of fuel around the homes affect the fire risk?
- 2 Take students outside and show them the five different containers you have prepared, describing the contents of each. Tell them that you will try to start a fire in each container. Have students predict which fire will be easiest to start, and which will be most difficult.
- 3 Use matches to try to light a fire in each container, one at a time. Follow the safety guidelines listed in Getting Ready. Lead a discussion about the results and the implication for wildland fires:
  - Which fuel burned the most readily?
  - Which fuel was most difficult to burn?
  - What types of plant materials would be best to have around residences in wildland–urban interfaces?
  - How do prescribed burns help to reduce the risk of wildfires?
  - How do healthy forests depend on wildland fires? How do they help to prevent high-intensity wildland fires that are particularly damaging in wildland–urban interfaces?

### TAKE IT OUTSIDE

Include questions about benefits of living in these areas, and comparing different cultural approaches to fire risk management, [see 2.17](#)

After the investigation offer an emotional check-in & processing break, specifically addressing lingering concerns, [see 2.18](#).

Consider breaking the lesson into two segments and continuing the next day for a longer break to reset nervous systems.

Figure 15: Living With Fire Excerpt – Part B: The Wildland-Urban Interface I, © Sustainable Forestry Initiative, Inc.

### 2.16 To begin (see Figure 15)

- Emotional check-in (if not done consecutively after Part A), see 2.12 and 2.7.
- Invite students to consider not only how the dominant culture (for example, through state and federal agencies) reduces risk of fire, but how other cultures reduce risk and explore how those risk management strategies differ. Research nondominant approaches and bring them to the lesson.
- Share the steps of the investigation in detail before taking students outside. Go over the entire procedure with students before heading outside (verbally, with drawings or photos). This will support students to not be surprised and will give them a chance to prepare and feel more in control of their learning experience. Remind students to tune in to their emotional, mental and physical needs, and that they can step away and take care of their needs at any time and/or let the educator or one of the volunteers know if they feel anxious.
- Check-in about concerns — ask students if they have any concerns about this investigation (such as their personal safety), then collectively troubleshoot how their concerns can be addressed through posing a question such as “how are we going to stay safe during this investigation?” (solutions- and strength-based focus).
- Explore whether the activity can be filmed and thus viewed by students who are not comfortable being directly confronted with fire, but could be inside the classroom viewing the investigation on a screen.


## 2.17 Setting-up the investigation (see Figure 15)

- Include in the set-up questions that you ask students:
  - Invite students to consider not only for what the risks are to living next to or within wildland areas, but also what the benefits are (strength-based approach).
  - Invite students to consider not only how the dominant culture reduces risk of fire, but how other cultures might reduce risk and how the risk management strategies might differ.

## 2.18 Checking-in after the investigation and processing break (see Figure 15)

- Ask students how they experienced this investigation emotionally. Ask if the concerns they had at the beginning came true. Perhaps use this opportunity to discuss how anxiety manifests about events in the future that have not happened yet and bringing awareness to the present moment can help reduce anxiety.
- Consider continuing with the lesson on the next day or following week to provide students an opportunity to process with their parent(s)/ caretaker(s), step away from thinking about fire, and reset their nervous system, especially since the following activity has a larger stress potential if a student's home has been threatened or impacted by fire.
- Provide opportunities for students to regulate their nervous system during this break.
- Prepare students that after the break they will be invited to explore how to make homes less susceptible to fire, giving them advance warning.

→ **4** Challenge students to research ways to make homes in your community safer from wildfires or provide them with copies of the Wildfire Safety Checklist student page.

→ **5**  **MULTIPLE SOLUTION PATHWAYS** Have students work either individually or in teams to design a home that is safer from wildfire. They can use art materials to draw a picture or make a model. Ask them to share their designs with the rest of the group, pointing out the safety features.

Mitigate potential student nervous system activation during the following activity by providing multiple options of participation and using invitational language vs. directive language, [see 2.19](#)

Invite students to collectively or individually end this activity by process how it impacted them, and what they need to leave it behind to continue on with their day, [see 2.20](#)

Provide a lesson wrap engagement, reflection, and pro-active approaches each student can take towards fire resilience, [see 2.21](#)

Figure 16: Living With Fire Excerpt – Part B: The Wildland-Urban Interface II, © Sustainable Forestry Initiative, Inc.

## 2.19 Student activity: Multiple solutions pathways — design a home that is less susceptible to wildfire (see Figure 16)

- This activity has a higher potential for causing stress, especially for students whose homes may have been impacted by fire. Educators could give students the option to participate in this activity or an alternative activity that relates to the content. An alternate activity might be a creative writing assignment to tell a story about fire that has a positive outcome (solutions-focused approach), or research the beneficial effects of fire and share it with the other students.
- For students participating in the original activity, giving them a host of choices will give them agency to decide on what level they have the capacity to engage. For example:
  - Work individually, in teams of two, or small groups.
  - Option to write about, draw or model the house.
  - Option to make it about their house, a fantasy house or someone else's house.
  - Give them options for if and how they want to share their end product (just with educator, in small groups, with the whole group), and allow students to opt out of sharing altogether.
- If a student determines that their home is not defensible, it may cause stress and anxiety. Be prepared to help the student regulate their nervous system through a resilience-focused and actionable list of things they can do (including resources for parents) and support the student to process their emotions before sending them out of the classroom.

## 2.20 Processing break (see Figure 16)

- Provide students an opportunity to check-in with their emotions as they participate in this activity — do a mood meter, or emotional weather report at the beginning, middle, and end.
- Invite students to share their emotions, journal, or creatively express emotions through art or acting them out. If a student determines that engaging in this activity is negatively affecting their emotional well-being, invite them to collaboratively troubleshoot, and give them the option to opt out and provide an alternative activity for them to do.
- After the activity, invite students to think about what their body, mind and heart need to process their emotions to continue on with their day, go to their next lesson, recess, lunch, etc.
- Encourage all students to engage in a processing activity of their choosing, for example:
  - Physical movement
  - Mindfulness meditation
  - Listing their own strengths and resilience factors

## Lesson wrap-up

## 2.21 Lesson reflection and proactive next steps (see Figure 16)

- Invite students to summarize key points and findings from lesson (share power).



- Highlight that while humans “live” with fire, as the lesson is called. There are many strengths, solutions, approaches we can draw on to make our community and homes resilient to fire. For example:
  - Invite students to identify ways they are resilient.
  - Invite students to brainstorm what is in their control (versus what is not in their control), leave them with actionable steps they can take to help shape their future interactions with fire, for example:
    - » Creating a defensible space around their house (even writing a letter to their families/caretaker(s) about how to create defensible space around their house).
    - » Personally preventing fires, such as being careful not to spark a flame near any easily combustible materials.
    - » Educating their families/caretaker(s) and community members about the fire triangle, fire prevention and how to make urban areas less susceptible to fire risk.
- Welcome students to end the lesson by sharing a thorn and a rose (a challenge, and a highlight or positive note) — this normalizes having ‘thorns’ while encouraging them to seek the ‘rose’ and not focus solely on the thorn.

## Assessment

Remember that an overwhelming stress response cuts off access to our rational/ thinking brain, and from a neurobiological perspective, students may literally not have access to their thinking brain, cannot practice self-regulation, may not have access to language or be able to express what they are feeling. This means they may not be able to participate in the lesson and complete any or all of the assessment activities. A poor assessment score may be seen as a punishment for experiencing traumatic stress, which can lead to new- or retraumatization.

### ASSESSMENT

Consider alternative assessment opportunities to avoid new- or retraumatization, see 2.22

Ask students to

- Create a picture board story—like a comic book without dialogue—of a wildland fire. Picture boards should have at least 10 frames showing how the area looked before the fire, what fuel was present, how the fire was ignited (natural or human causes), whether any structures in the area followed fire-safe guidelines, and which part(s) of the fire triangle was removed to stop the fire.
- Draw and label the fire triangle and detail two ways in which it relates to the fire behavior triangle.
- Identify steps people can take to reduce wildfire risk in the wildland–urban interface.

Figure 17: *Living With Fire* Excerpt – Assessment, © Sustainable Forestry Initiative, Inc.

## 2.22 Alternative assessment opportunities (see Figure 17)

- Invite students to collaboratively come up with ways that they would like to be assessed for their learning during this lesson (power sharing).
  - If possible, implement the collaborative assessment ideas.
- Include experiential objectives in the assessment and encourage students to reflect on how they met them.
- Invite students to reflect on if their own personal objectives have been met.
  - Why or why not? Is there anything they would change about their personal objectives now at the end of the lesson?



- For students who experienced stress during this lesson and perhaps could not participate fully, a trauma-informed approach would be not to rate their assessment as poor. Even if they could not engage with all or some of the content, they may have learned how to regulate their nervous system, how to check-in with their emotions, how to take care of their needs, and/or speak up for their needs (In other words, the experiential objectives of the lesson may have been met).

## Enrichment

### ENRICHMENT

Include a solutions-, strength-based focus for enrichment activities, [see 2.23](#)

- Research your state's primary causes of wildfires. Consult the state forestry agency (usually found within the state department of natural resources or department of agriculture) or the state office of the USDA Forest Service. Students can use this information to create tables, graphs, or other visual representations showing numbers and percentages of fires from different causes.
- Have students compare the number, sizes, and costs of prescribed fires and wildland fires in the United States over the past several years. These statistics are available from the National Interagency Fire Center ([nifc.gov](http://nifc.gov)). Students may graph data to support their analysis.
- Changes in climate—such as higher temperatures, drier conditions, and more frequent and intense storms—can increase the risk and extent of wildfires. Lead a discussion about what communities might do to prepare for the possibility of greater fire risk.
- Invite students to research fire-adapted plant species to learn how they are adapted to wildfires. Possibilities include ponderosa pine, shortleaf pine, lodgepole pine, Ceanothus species (California lilac), and coffeeberry. Challenge them to design a new species that is adapted to fire and to describe its characteristics that enable it to thrive in a fire-prone ecosystem.

Figure 18: *Living With Fire* Excerpt – Enrichment, © Sustainable Forestry Initiative, Inc.

### 2.23 Include solutions/strength-based focus for enrichment activities (see Figure 18)

- Researching the benefits fire has on ecosystems.
- Reading about new technology and tools fire managers are using today.
- Identifying actionable items for individuals and communities for fire adaptation and resilience.
- Comparing similarities and differences between fire-adapted plant species with fire-adapted communities.

## After the lesson

### 3.1 Nervous system regulation

- **Students:** Pay extra attention to students' behavior throughout the rest of the day, week and month. Sometimes traumatic stress is not manifested in symptoms until days or weeks after the event. Provide ample opportunities — directly after the lesson but also throughout the rest of the school week — for students to regulate their nervous system.
- **Educator:** Build in extra opportunities for care, immediately after the lesson, throughout the day, that evening and for the rest of the week, as long as needed (see “Care for educators”).

### 3.2 Continued processing

- Encourage students to process what they learned/explored in the lesson with a trusted adult when they get home (parent, sibling, grandparent, caretaker, etc.).
- Invite students to journal about what they thought about or felt later that day:
  - Perhaps assign this as homework for the day or the week.
  - Build journaling time into every school day.
- Check in with students the next school day about anything they would like to process/share/reflect on either with the whole group, in smaller groups, through silent reflection, or individually with the educator.
  - Whole group sharing: give students the option to 'pass.' Don't force anyone to share if they are not comfortable but do normalize and validate that having uncomfortable or heightened emotions after this fire lesson is normal.
  - Start the check-in activity by sharing the educator's emotions/reflections first (model vulnerability, resilience, power sharing).
  - If a student does not want to share in the whole group, make sure the educator checks in with the student one-on-one later to check on mental and emotional well-being and take any necessary actions if needed
- A few days or a week later, provide another opportunity for students to check-in about how they are feeling (can be in general or about fire), any questions they have, any new feelings that came up.
  - This could be built into a daily sharing circle, or other emotional check-in/check-out activity that becomes part of the regular classroom routine.

## Next steps

Trauma-informed practice is a huge and complex topic — whether in health care or in education. Research on the best approaches, strategies, and underlying causes is ongoing and there are constantly new breakthroughs about how the human brain, emotional heart and body experience traumatic stress and how it can be alleviated. This toolkit is a relatively short summary of this complex topic. You are encouraged to deepen your learning and understanding through further reading (see the included resource list), trainings and workshops, and by discussing and processing your learning and experiences with others, such as peers and colleagues. Remember that trauma informed approaches in education ask for a commitment to progress, never perfection.

The most important thing to remember is to take care of yourself before attempting to provide care for others — put that oxygen mask on yourself first!

## Glossary of terms

- **Acute trauma:** resulting from a single event, such as having to evacuate due to fire threat.
- **Adverse Childhood Experiences (ACEs):** experiences that can be grouped into the primary realms of household, environment, and community. ACEs have a large disposition to cause traumatic stress harming children, adults, organizations, systems, and communities and reducing resilience.
- **Amygdala:** a bilateral almond sized cluster of cells that are part of the limbic system (in the midbrain) that regulate emotions and help encode memories; acts as internal alarm system that triggers a survival response when threat is perceived.
- **Chronic trauma:** resulting from a repeatedly occurring or prolonged event or circumstance, such as bullying or experiencing chronic poverty.
- **Collective trauma:** an event or series of events that directly negatively impacts the feeling of safety of a group or multiple groups of people.
- **Complex trauma:** resulting from an occurrence of multiple and often diverse events or circumstances, such as having to evacuate due to fire threat, being bullied, parent's divorcing and experiencing chronic poverty.
- **Cultural responsiveness:** being aware of cultural factors that may inform student's goals, behaviors, language and outlook on life, and responding to them in an appropriate manner by striving to create meaningful, relevant, and appropriate connections between the educational content being taught and the student's culture.
- **Hyperarousal:** occurs when the sympathetic nervous system is overly active, leading to symptoms such as rapid shallow breathing, tense muscles, increased heart rate, inability to eat.
- **Hypoarousal:** occurs when the parasympathetic nervous system is overly active leading to symptoms such as depression, lethargy, fainting, "checking out" mentally and emotionally.
- **Individual trauma:** an event or circumstance that causes a trauma stress response that is experienced by an individual only. It can be acute, chronic, or complex.
- **Neuroplasticity:** ability of the malleable neurons in the brain to grow and change.
- **Transgenerational or intergenerational trauma:** trauma passed on to future generations through storytelling, imprints on familial culture; trauma that shapes societal culture, neurobiology and/or genetics.
- **Trauma protective factors:** factors that encourage stability, thriving, independence and safety and are considered protective, like having a buffer, thus fostering resilience.
- **Trauma resilience:** ability of a child or adult to cope, process, and adapt to a traumatic event. As a very general rule of thumb, the faster someone can bounce back, resume daily functioning, and engage with healthy coping mechanisms for everyday stressors, the higher the person's trauma resilience.

- **Trauma risk factors:** Factors that deteriorate the feeling of security, ability to thrive and be in control of life choices.
- **Trauma stress response or traumatic stress:** neurobiological response to adverse experiences or circumstances, specifically to emotional, psychological, and spiritual wounding rather than physical wounding that may be present, for example, after a car accident; can include fight, flight, freeze/immobilization, fawn/submit.
- **Trauma-informed care:** an approach to providing support that is accessible and appropriate for.
  - » Anyone who has experienced, or is currently experiencing, traumatic stress. It does not aim to treat symptoms related to trauma but rather provides a framework for working in a way that invites flexibility and empathy for those experiencing traumatic stress.
- **Trauma-informed:** using knowledge of the impact trauma has and applying it to change personal behavior, professional policies and practices, inform interactions with others, and change systems whether on the micro or macro scale.
- **Trauma-sensitive:** awareness of the pervasiveness and impact of trauma on individuals and our society collectively and how it might impact someone's well-being.
- **Trauma-specific:** therapeutic interventions focused on reducing symptoms, promoting trauma recovery and post-trauma growth.
- **Trauma:** adverse effects on a person's mental, physical, social, emotional, or spiritual well-being that often result from experiencing a harmful event or set of circumstances. Trauma in this context is not the event or circumstance itself (such as a car accident) but rather the effects the event or circumstance has on the person (for example, anxiety or fear of driving).
- **Vicarious or secondary trauma:** trauma experienced by a secondary observer.



# Appendix

## Appendix I—Project Learning Tree activity *Living with Fire* including trauma-informed lens

Copyright 2021, Sustainable Forestry Initiative Inc. Permission to reprint this activity has been granted to the OR PLT State Program to be used exclusively in annotated format in the Trauma-Informed Toolkit for Educators through Oregon State University. Educators Prior to engaging with the lesson consider laying some ground-work, see 1.1 to 1.5

GRADES 6-8

For example; regulating & grounding the educator's nervous system, giving students and their families/caregiver(s) advance notice, giving relevant school staff advance notice, collaboratively creating learning objectives with students, setting learning expectations, and into account cultural responsiveness when inviting guest speaker.

how the fire triangle can be used to prevent and manage wildland fires, particularly in the wildland-urban interface.

# LIVING WITH FIRE

On the day of the lesson, incorporate strategies for setting up the space physically as well as mentally and emotionally, see 2.1 to 2.7

**SUBJECTS**  
Science, Social Studies

**PLT CONCEPTS**  
4.8, 5.3

**STEM SKILLS**  
Investigation, Leadership, Problem Solving

Consider the human & emotional component to fire as well, see 2.8

For example: fire-human interactions have been documented for many centuries. In the recent years, humans have been confronted with fire more frequently, due to increased occurrence, size, and intensity of fires - whether on wildland or in rural and urban areas. It is natural for humans to experience heightened emotions surrounding this topic, because fire has the potential to affect basic human needs - shelter, food, water, physical safety, and social connection.

extinguishers, buckets or other containers filled with water, safety goggles, art materials.

**TIME CONSIDERATIONS**  
Preparation: 50 minutes  
Activity: One to two 50-minute periods

**OBJECTIVES**  
Students will

- Describe the three elements of the fire triangle and explain how eliminating one (or more) can help prevent or control a fire.
- Describe ways to reduce the fire risk to homes in the wildland-urban interface.

Add experiential objectives (inner impact of lesson), and invite students to contribute their own objectives - which may be different than lesson- or educator objectives, see 1.2

**BACKGROUND**

Prior to reading the background - check-in with nervous system, and practice nervous system regulation if needed, see 1.1

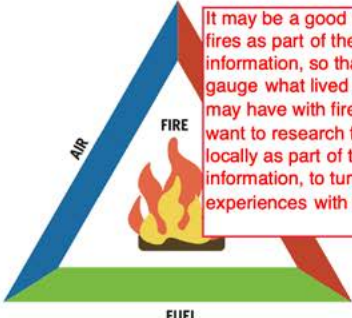
From an ecological standpoint, fire is neither "good" nor "bad." Fire occurs naturally through lightning strikes in the presence of dry fuel. Fires also occur when humans start them, intentionally or accidentally.

Fire is a natural event in many forest ecosystems and can help to recycle nutrients back into the soil or help some plants regenerate. Fire is also an important component in the life cycle of several tree species: they need intense heat to open their cones and release seeds, and they thrive after a fire opens the forest canopy and allows more light to reach the ground.

Fires need heat, fuel, and oxygen to burn; these three elements are known as the "fire triangle." Initially, the heat is provided by an ignition source such as lightning, matches, or sparks. Fuels include dry trees, dead trees and limbs, leaf litter, and dry grass. Oxygen is available in the air. If you remove any of the elements of the fire triangle, the fire will not burn.

It may be a good idea to research local fires as part of the background information, so that educators can gauge what lived experiences students may have with fire. Educators may want to research fires that occurred locally as part of the background information, to tune into student's lived experiences with fire, see 2.8

### THE FIRE TRIANGLE



K-8 ENVIRONMENTAL EDUCATION ACTIVITY GUIDE

LIVING WITH FIRE 315



## FOREST FACT

Closely spaced small trees and branches in the understory can act as ladders that allow fire to spread more easily into the upper canopy. The resulting “crown” fire can become extreme in certain forest types and weather conditions.



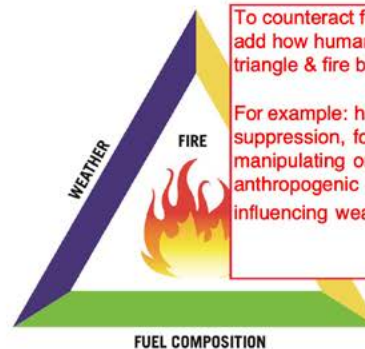
Expand on what benefits might come from crown fires (vs. only being harmful), for example, [see 2.10](#):

After a crown fire, a burned tree may be used as nesting sites for birds, homes for small mammals, reptiles, amphibians, and insects and may also serve as a base from which new plants can grow. When the burned tree decays it enhances growth of other plants through releasing nutrients into the soil.

Wildland fires are also influenced by the “fire behavior triangle,” which includes other factors, particularly weather, fuel composition, and topography.

- Weather conditions have a great influence on when fires occur and how they spread. Sustained high temperatures and low humidity dry out forest debris, making the landscape more susceptible to fire. The stronger the winds, the more quickly moisture evaporates from the vegetation, and the faster fire can spread.
- Fuel composition, including moisture level, chemical makeup, and density, determines the degree of flammability.
- Topography, which describes an area’s slope and steepness and whether it has canyons, valleys, or rivers, determines how hot and dry an area is and how quickly a fire can spread.

### THE FIRE BEHAVIOR TRIANGLE



To counteract feelings of loss of control, add how humans can influence the fire triangle & fire behavior triangle, [see 2.8](#)

For example: human ignition of fires, fire suppression, forest management, manipulating or changing topography, anthropogenic climate change factors influencing weather, etc.

Historically, different regions of North America had distinct “fire seasons” when wildland fires were more likely to occur. Conditions such as earlier winter snow melt, drought, and tree mortality from insect infestation have extended the traditional fire season in many areas. Wildfires now sometimes occur year-round, forcing some forest managers to consider the “fire year” when making fire management decisions.

Use present tense when describing Indigenous cultural practices for cultural inclusiveness. Indigenous people are living and thriving in North America and around the world today, [see 2.9](#)

Fire has been an important tool in Indigenous cultures in North America and in other cultures around the world. Fire has traditionally been used to attract game animals by stimulating new growth, reducing populations of unwanted animals, fertilizing the soil to enhance crop growth, and clearing areas of forests. It has also been used as a management tool to bring back endangered species such as the Kirtland’s warbler and the Karner blue butterfly.

Over the years, fire management techniques have shifted to an active management strategy. A **prescribed burn** (one that is lighted by trained fire personnel when prescribed fuel and weather conditions are right) can prepare a harvested area for reforestation, enhance wildlife habitat and berry production, protect native species, manage invasive species, or reduce future fire hazard by reducing burnable fuels. Prescribed burns can also be used to prevent the spread of wildfires and protect communities.

Highlight that Indigenous cultures have in the past and still practice today controlled, deliberate burns. Acknowledging the cultural history and present aspects of prescribed burns fosters cultural responsiveness, **see 2.9**



In the United States, the human population continues to grow from urban areas into outlying rural and wildland areas. This demographic change is increasing the extent of the wildland–urban interface, the area where human-built structures and development meet or intermingle with undeveloped wildlands.

As more homes and other buildings are constructed near forests and other wildland areas, there is an increased likelihood that wildfires will threaten both structures and people. Because fires can readily move between buildings and vegetative fuels, it is becoming more difficult to manage fires in the wildland–urban interface. Homes, property, and lives within the wildland–urban interface are increasingly threatened by wildfire, and preventing, controlling, and suppressing it remains a challenge.

Ultimately, healthy forests are resilient forests. In fire-adapted ecosystems, a healthy forest has openly spaced trees and underbrush, a mosaic of different size and aged patches of forests, and the regular presence of fire. By promoting healthy forests, forest managers help to reduce the risk of wildland fire and also prevent unwanted effects of fire.

Include solution-focused paragraph (after the somewhat bleak forecast in 2nd to last paragraph), **see 2.10**

## BURNABILITY

Different types of fuels burn differently, depending on their moisture content and other factors.

- Dead pine needles and other dead fuels ignite easily.
- Green or live fuels contain lots of moisture, preventing them from igniting. If they are really wet, water also keeps them from igniting.
- Green pine needles are hard to ignite, but once they start burning, they are consumed quickly due to the oils and other volatile compounds they contain.
- Small pieces of fuel (like twigs) are much easier to ignite than large pieces (like a log) because they have more surface area exposed to oxygen and to the ignition source.
- Charred wood is hard to ignite because carbon (the fuel) is burned off from the surface, leaving unburnable minerals such as silicon.

For example; despite the increased risk of fire to humans, buildings, and forest ecosystems, in recent years there have been many advances in effective fire prevention and management, such as new technology, increased government budgets for fire management, learning from and working with Indigenous communities on implementing prescribed burns, public education campaigns, community based pro-active fire prevention programs (such as FireWise), and a host of cutting-edge research and tool development for public and private fire management.





Guest Speakers, [see 1.5](#):

To foster cultural diversity and inclusiveness, consider expanding the guest speaker invitation list beyond members of the dominant culture, and include in the definition of a “forest fire management professional” people with diverse backgrounds, such as a Tribal member who has extensive knowledge in cultural fire management practices.

Offer ways that guest speakers can support a trauma-informed learning setting

Educator might want to check-in with their nervous system as they prepare for the activities, if it feels dysregulated consider adapting the lesson plan, asking for help to make it manageable, and/or employing nervous system regulation tools, [see 2.11](#)

## GETTING READY

### PART A:

→ Gather materials for the investigation. Invite a local firefighter or forest fire management professional to visit your group.

### PART B:

Set up five metal containers and fill each one halfway with the following fuels:

1. Different-sized live branches, leaves, and needles (all green).
2. Different-sized dead and dry branches, leaves, and needles.
3. Different-sized dead and damp branches, leaves, and needles (or a dry assortment that has been sprayed lightly with water).
4. Large-diameter fuels, such as branches or whole pieces of wood (not kindling).
5. Partially burned pieces, such as from a fireplace or campfire (used but not completely consumed).



**SAFETY CHECK!** Place metal containers outside on a fire-resistant surface (concrete, asphalt, or bare earth) away from cars, buildings, and dry vegetation. Be sure to have water and a fire extinguisher readily available. Ask another adult to assist with the demonstration, and wear safety goggles.

Offer choices for how students can engage with this activity, [see 2.13](#)

For example; work individually, in teams of two, or small groups / provide alternative activities if a student does not have the capacity to take part in this one, i.e. creating a drawing or other art piece about the fire triangle, conducting research about the fire triangle, and so on.

Swap out directive language for invitational language in student worksheet, [see Student Pages below and 2.13](#)

Processing break, if needed, before continuing on, [see 2.7](#)

Invite guest speaker to utilize trauma-informed strategies, [see 2.14](#)


For example; share only solution-focused examples of fires that have been contained or eliminated, share with students times they felt stressed or anxious about fires and how they managed their emotions.

Begin with a student emotional check-in, overview of lesson schedule, and offer opportunities for nervous system regulation, [see 2.12 & 2.7](#)

## ACTIVITY

### PART A: FIRE TRIANGLE

**1** Ask students, “What things do you think a fire needs to burn? What do you think happens if one of these things is missing?”

→ **2**  **HANDS-ON LEARNING** Divide the group into teams of 3–4 students. Provide each team with a birthday candle, modeling clay, a jar, a lid, and a set of matches.

→ **3** Pass out copies of the Fire Triangle Investigation student page. Invite teams to conduct the investigation described and answer the questions.

**4** When everyone is finished, ask the group what three things are needed for fire to burn. Draw a picture of the fire triangle where everyone can see it.

**5** Have a local firefighter or forester talk with your group about the equipment and techniques used to put out fires, relating each technique to the fire triangle.

→ Have them also discuss ways to prevent fires. Alternatively, share a video about techniques people use to fight wildland fires (see [plt.org/myk8guide](http://plt.org/myk8guide) for suggestions).

End with an emotional check-in & processing break, [see 2.15 & 2.7](#)

Begin with emotional check-in (if not done consecutively with Part A), and provide detailed overview of investigation, so students know what to expect, asking about concerns and jointly troubleshooting concerns that may come up, [see 2.16](#)



## PART B: THE WILDLAND-URBAN INTERFACE

**1** As city populations expand, the urban boundary expands into wildland areas. This means that more and more people are building homes in woodland and grassland areas. Ask:


- What might be the risks in living next to or within wildland areas?
- How might people reduce the risk of fire in these wildland–urban interfaces?
- How might the type of fuel around the homes affect the fire risk?

**2** Take students outside and show them the five different containers you have prepared, describing the contents of each. Tell them that you will try to start a fire in each container. Have students predict which fire will be easiest to start, and which will be most difficult.

**3** Use matches to try to light a fire in each container, one at a time. Follow the safety guidelines listed in Getting Ready. Lead a discussion about the results and the implication for wildland fires:

- Which fuel burned the most readily?
- Which fuel was most difficult to burn?
- What types of plant materials would be best to have around residences in wildland–urban interfaces?
- How do prescribed burns help to reduce the risk of wildfires?
- How do healthy forests depend on wildland fires? How do they help to prevent high-intensity wildland fires that are particularly damaging in wildland–urban interfaces?

**4** Challenge students to research ways to make homes in your community safer from wildfires or provide them with copies of the Wildfire Safety Checklist student page.

**5**  **MULTIPLE SOLUTION PATHWAYS** Have students work either individually or in teams to design a home that is safer from wildfire. They can use art materials to draw a picture or make a model. Ask them to share their designs with the rest of the group, pointing out the safety features.

Invite, but make it optional for students to share, whether in small groups, with the whole group, only with the educator, or not at all

Invite students to collectively and/or individually end this activity by process how it impacted them, and what they need to leave it behind to continue on with their day, [see 2.20](#)

## TAKE IT OUTSIDE

Include questions about benefits of living next to or within wildland areas (to balance out the risks), and compare different cultural approaches to fire risk management, [see 2.17](#)

site or nearby natural area to identify

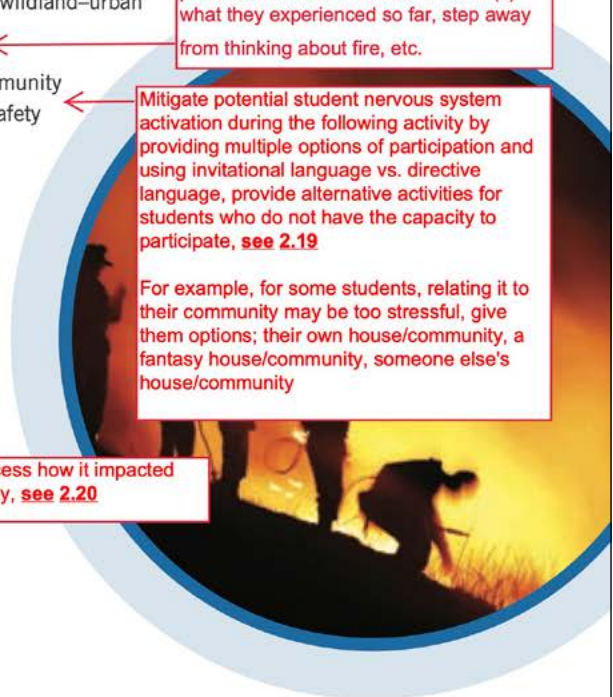
For students not comfortable witnessing this investigation in person, explore whether it could be filmed and broadcast indoors (as part of jointly troubleshooting concerns), [see above and 2.16](#)

After the investigation offer an emotional check-in & processing break, specifically addressing lingering concerns, [see 2.18](#)

Consider breaking the lesson into two segments and continuing the next day for a longer break to reset nervous systems, provide students an opportunity to process with their families/caretaker(s) what they experienced so far, step away from thinking about fire, etc.

Mitigate potential student nervous system activation during the following activity by providing multiple options of participation and using invitational language vs. directive language, provide alternative activities for students who do not have the capacity to participate, [see 2.19](#)

For example, for some students, relating it to their community may be too stressful, give them options; their own house/community, a fantasy house/community, someone else's house/community





Add a Lesson Reflection & Proactive Next Steps, [see 2.21](#)

For example;

- Invite students to summarize key points and findings from lesson (share power)
- Highlight ways society is resilient and can reduce fire risk while "Living With Fire"
- Brainstorm actionable steps students can take to reduce fire risk in their home and community
- Encourage students to end the lesson by sharing a thorn and a rose (a challenge, and a highlight or positive takeaway - this normalizes having 'thorns' or challenges)

## ACADEMIC STANDARDS

### SCIENCE

#### Practices

- Analyzing and interpreting data

#### Concepts

- Natural hazards
- Cause and effect

### SOCIAL STUDIES

#### Practices

- Communicating conclusions and taking informed action

#### Concepts

- Geography: human–environment interactions
- Geography: spatial patterns and movement of human populations

Consider alternative assessment opportunities to avoid new- or retraumatization, [see 2.22](#)

For example, inviting students to come up with ways they would like to assess their learning, assess if experiential and student's personal objectives were met, etc.

## ASSESSMENT

Ask students to

- Create a picture board story—like a comic book without dialogue—of a wildland fire. Picture boards should have at least 10 frames showing how the area looked before the fire, what fuel was present, how the fire was ignited (natural or human causes), whether any structures in the area followed fire-safe guidelines, and which part(s) of the fire triangle was removed to stop the fire.
- Draw and label the fire triangle and detail two ways in which it relates to the fire behavior triangle.
- Identify steps people can take to reduce wildfire risk in the wildland–urban interface.

## ENRICHMENT

Include a solutions-, strength-based focus for enrichment activities, [see 2.23](#)

- Research your state's primary causes of wildfires. Consult the state forestry agency (usually found within the state department of natural resources or department of agriculture) or the state office of the USDA Forest Service. Students can use this information to create tables, graphs, or other visual representations showing numbers and percentages of fires from different causes.
- Have students compare the number, sizes, and costs of prescribed fires and wildland fires in the United States over the past several years. These statistics are available from the National Interagency Fire Center ([nifc.gov](http://nifc.gov)). Students may graph data to support their analysis.
- Changes in climate—such as higher temperatures, drier conditions, and more frequent and intense storms—can increase the risk and extent of wildfires. Lead a discussion about what communities might do to prepare for the possibility of greater fire risk.
- Invite students to research fire-adapted plant species to learn how they are adapted to wildfires. Possibilities include ponderosa pine, shortleaf pine, lodgepole pine, Ceanothus species (California lilac), and coffeeberry. Challenge them to design a new species that is adapted to fire and to describe its characteristics that enable it to thrive in a fire-prone ecosystem.

After the lesson, provide nervous system regulation opportunities for all involved in the lesson (students, educator, volunteers, etc.) and check-in with students again about how they are processing this lesson the next day, a week later, at other appropriate times and as needed, [see 3.1 & 3.2](#)

## Fire Triangle Investigation

# STUDENT PAGE

NAME \_\_\_\_\_

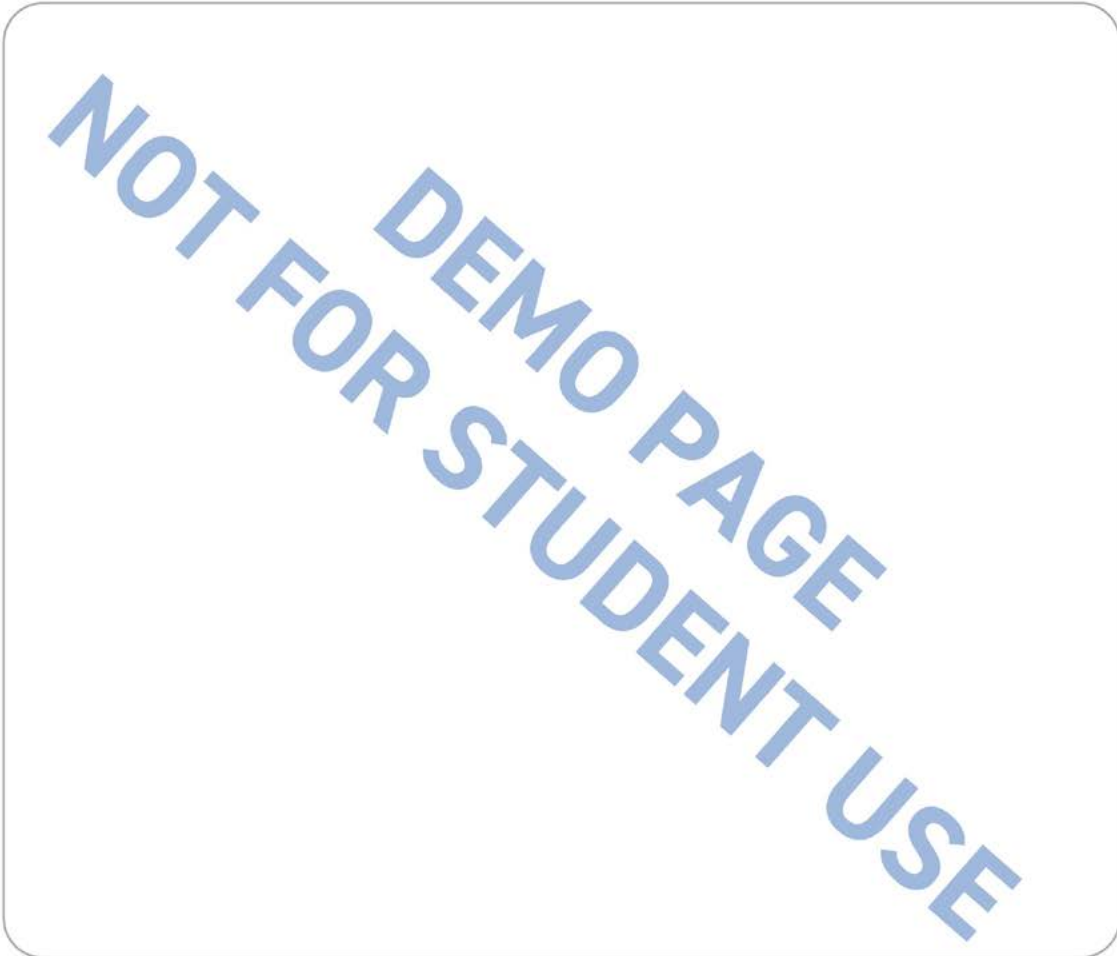
Use invitational language where possible and appropriate, see 2.13 & 2.7

For example, begin the worksheet with a sentence saying "You are invited to follow the investigation instructions below to explore the fire triangle."

Fires need three things to burn: heat, fuel, and oxygen. This is known as the "fire triangle."

are encouraged to

1. Draw a triangle here. You will add to this picture as you conduct your investigation.



2. Attach a birthday candle to the inside of the jar lid with modeling clay. Place the lid and candle on a tabletop and use a match to light the candle. What element of the fire triangle does the match demonstrate?

\_\_\_\_\_

Label one side of your triangle above with the word and draw a picture that shows this element.



# STUDENT PAGE

## Fire Triangle Investigation (cont.)



NAME \_\_\_\_\_ DATE \_\_\_\_\_

3. Screw the jar onto the lid to cover the lit candle (so the jar is upside down). What happened?

\_\_\_\_\_

What element of the fire triangle does this demonstrate?

\_\_\_\_\_

Label another side of your triangle above with the word and draw a picture that shows this element.

4. Open the jar, relight the candle, and put the jar back onto the lid. When the flame starts to go out, reopen the jar. What happened?

\_\_\_\_\_

What does this show?

\_\_\_\_\_

5. Take the jar completely off the lid and allow the candle to burn until the flame goes out by itself. What happened?

\_\_\_\_\_

\_\_\_\_\_

How long did it take?

\_\_\_\_\_

What element of the fire triangle does this demonstrate?

\_\_\_\_\_

Label the last side of your triangle above with the word and draw a picture that shows this element.

6. Fire needs heat to burn. Initially, the heat is provided by a spark or flame, which can be produced by natural causes or generated by humans. Name two natural and two human-caused sources of heat that could start a fire.

Natural

You are encouraged to name

• \_\_\_\_\_

• \_\_\_\_\_

Human-caused

• \_\_\_\_\_

• \_\_\_\_\_

NAME \_\_\_\_\_

DATE \_\_\_\_\_

You are invited to name

7. Fires need fuel to burn. Name three possible fuels you might find in a forest.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Fires need oxygen, which is available in the air. Hot temperatures and dry winds can create severe fire conditions. How might dry winds increase the chance of wildfires?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. If you cut off any one of the three elements—heat, fuel, and oxygen—a fire will not burn. What is one way that fire-fighters might cut off each of the three elements of the fire triangle?

Heat: \_\_\_\_\_

Fuel: \_\_\_\_\_

Oxygen: \_\_\_\_\_

NOT FOR DEMO PAGE  
STUDENT USE



## CAREER CORNER

**WILDLAND FIREFIGHTERS** protect and maintain the health of the forest by preventing, controlling, and putting out forest fires, and lighting and managing prescribed burns. They may also talk to the public about ways they can help prevent fires.



# STUDENT PAGE

## Wildfire Safety Checklist

NAME \_\_\_\_\_

DATE \_\_\_\_\_

Wildland fire is an element of nature, just like weather, soils, minerals, plants, animals, and water. In fact, some landscapes depend on periodic fire to maintain a healthy ecosystem. As with other natural elements, fire is unpredictable and cannot always be controlled. Householders in fire-prone areas must make their homes “defensible” against wildfire.

**You are welcome to use**

Use this checklist to assess wildfire safety in three zones around your home. (Note: Check with your local fire safety agency for requirements in your area, which may be different.)

**Provide option to use their own home, a different home in the community, or a fantasy home**

**Use invitational language and give students multiple options for how they want to engage with this activity. If a student does not have the capacity to engage at all, provide alternative activity choices, see 2.19**



### **Immediate Zone (within 5 feet)**

- Nothing flammable within 5 feet of any structure
- No plants, mulch, woodpiles, furniture, or stored or decorative items within 5 feet of structure

### **Intermediate Zone (5–30 feet)**

- Area is “lean, clean, and green”
- All dead plants, grass, and weeds are removed
- Tree branches are trimmed so that they are a minimum of 10 feet from other trees
- Plants are watered regularly
- No woodpiles (move them to Zone 2)
- Trees and shrubs are separated from items that could catch fire, such as patio furniture or swing sets

### **Extended Zone (31–100 feet)**

- Annual grass is cut or mown to a maximum height of 4 inches
- Trees branches are removed if less than 6 feet from the ground
- Shrubs and trees are planted in “islands” with space around them
- Shrubs and trees are pruned to eliminate fire ladders (places where fire could climb from the ground to the plant’s crown)
- Fallen leaves, needles, twigs, bark, cones, and small branches are removed (but may be permitted to accumulate on the ground to a depth of 3 inches)

I LOVE MY  
GREEN JOB!

**C** If a student determines that their home is not defensible, it may cause stress and anxiety. Be prepared to help the student regulate their nervous system through a resilience-focused and actionable list of things they can do (including resources for parents) and support the student to process their emotions before sending them on their way, see 2.19 & 2.21

**FIRE PREVENTION SPECIALISTS** work to reduce the risk and extent of forest fires. They may inspect outdoor public and residential areas for fire hazards, enforce fire regulations, and recommend fire prevention measures.

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PROJECT LEARNING TREE K-9 ACTIVITY GUIDE © SUSTAINABLE FORESTRY INITIATIVE

## Appendix II—Letter template for families/caretaker(s)

This communication template can be adapted and modified to send to families or caretaker(s) a week or so prior to implementing the *Living With Fire* lesson with students. Please modify language, style, length, type of communication (for example, email, text, letter) to be appropriate for the educator and families/caretaker(s).

---

Dear **[insert name]**

Hope this **[insert type of communication, for example, email, letter, text]** finds you well!

Next week on **[insert date]**, I am planning on taking the students through a lesson on fire. I am sharing this with you in advance because the topic of fire and some of the investigations we will be doing have the potential to cause stress, especially if a student has had a previous traumatic interaction with fire.

The goals of the lesson are to learn about the fire triangle (what is required for fire to burn) and what factors influence fire behavior and explore the wildland-urban interface including how fire risk to homes can be minimized.

As part of the lesson:

- I will show pictures and a video depicting fire. I will not show houses on fire or photos of humans or animals being hurt.
- Students will be invited to use matches to light a birthday candle as part of the first investigation.
- For the second investigation, I will light fires in five metal containers asking students to make a prediction about which type of fuel is most flammable. I will put out the fires immediately after the activity. Students will not be asked to be directly involved in lighting or putting out these small fires. They will all be merely observers from a safe distance.
- Everyone handling the fires will be wearing safety equipment, and there will be a fire extinguisher on-hand **[mention if there will be any other adults present to assist]**.
- Students will be invited to research/discuss fire risk to humans and human settlements as well as ways to reduce fire risk for their own home, a fictional home, or someone else's home.
- Students will be invited to reflect on their feelings about fire. Reflection options will include silent journaling, drawing, and sharing in small groups or with the whole group. Students will be given the opportunity to opt out of sharing their feelings with others if they would like.

If you have any concerns or questions about your student engaging in this lesson, please do not hesitate to reach out to me **[contact information]**, our school counselor **[if applicable, insert contact information]**, or the homeroom teacher **[if applicable, insert contact information]**. If you notice any changes in your student's behavior, mood, or physical well-being after the lesson that troubles you, please let us know and do not hesitate to seek support from a mental health professional.

Best Wishes,

**[Name, signature]**



## Appendix III—Letter template for school staff

This communication template can be adapted and modified to send to school staff, for example the school counselor or homeroom teacher, a week or so prior to implementing the *Living With Fire* lesson with students. Please modify language, style, length, type of communication (for example, email, text, letter) to be appropriate for the educator and school staff.

---

Dear **[insert name]**

Hope this **[insert type of communication, for example, email, letter, text]** finds you well!

Next week on **[insert date]**, I am planning on taking my students through a lesson on fire. I am sharing this with you in advance because the topic of fire and some of the investigations we will be doing, have the potential to cause stress, especially if a student has had a previous traumatic interaction with fire.

The goals of the lesson are to learn about the fire triangle (what is required for fire to burn) and what factors influence fire behavior and explore the wildland-urban interface including how fire risk to homes can be minimized.

As part of the lesson;

- I will show pictures and a video depicting fire. I will not show houses on fire or photos of humans or animals being hurt.
- Students will be invited to use matches to light a birthday candle as part of the first investigation.
- For the second investigation, I will light fires in five metal containers asking students to make a prediction about which type of fuel is most flammable. I will put out the fires immediately after the activity. Students will not be asked to be directly involved in lighting or putting out these small fires. They will all be merely observers from a safe distance.
- Everyone handling the fires will be wearing safety equipment, and there will be a fire extinguisher on-hand **[mention if there will be any other adults present to assist]**.
- Students will be invited to research/discuss fire risk to humans and human settlements as well as ways to reduce fire risk for their own home, a fictional home, or someone else's home.
- Students will be invited to reflect on their feelings about fire. Reflection options will include silent journaling, drawing, and sharing in small groups or with the whole group. Students will be given the opportunity to opt out of sharing their feelings with others if they would like.

I have sent a similar **[insert type of communication, for example, email, letter, text]** to the families/caretaker(s) of all my students and invited them to reach out to either me or you if they have any questions or concerns prior to the lesson or notice any changes in behavior, mood, or physical well-being in their student after the lesson.

Please don't hesitate to get in touch if you would like to talk about this lesson with me.

Best Wishes,

**[Name, signature]**

## Acknowledgements

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# Resources and references

## Resources

### Mental health helplines

- **Crisis Text Line:** Text HELLO to 741741 for free and confidential support 24 hours a day throughout the U.S. <http://www.crisistextline.org>
- **National Suicide Prevention Lifeline:** The Lifeline provides 24-hour, toll-free, and confidential support to anyone in suicidal crisis or emotional distress. Call 1-800-273-TALK (8255) to connect with a skilled, trained counselor at a crisis center in your area. Support is available in English and Spanish. <https://suicidepreventionlifeline.org>
- **Disaster Distress Hotline:** This helpline, sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), provides immediate counseling for people affected by any disaster or tragedy. Call 1-800-985-5990 to connect with a trained professional from the closest crisis counseling center within the network. <https://www.samhsa.gov/find-help/disaster-distress-helpline>

### Trauma resources

- Trauma-Informed Oregon (website). <https://traumainformedoregon.org/resources/>
- Substance Abuse and Mental Health Services Administration (SAMHSA). <https://www.samhsa.gov/>
- Positive and Adverse Childhood Experiences (PACES). <https://www.pacesconnection.com>
- Department of Justice, Office for Victims of Crime. *Vicarious Trauma Toolkit*. <https://ovc.ojp.gov/program/vtt/what-is-vicarious-trauma>
- Good Ancestors: Dr. Mariel Buquè on Breaking the Chains of Intergenerational Trauma (podcast). <http://laylafsaad.com/good-ancestor-podcast/ep040-dr-mariel-buque>
- The National Child Traumatic Stress Network. *Age-Related Reactions to a Traumatic Event*. [https://www.nctsn.org/sites/default/files/resources//age\\_related\\_reactions\\_to\\_traumatic\\_events.pdf](https://www.nctsn.org/sites/default/files/resources//age_related_reactions_to_traumatic_events.pdf)
- Psychological First Aid. *Field Operations Guide 2nd Edition*, National Child Traumatic Stress Network and National Center for PTSD. 2006. [https://www.nctsn.org/sites/default/files/resources//pfa\\_field\\_operations\\_guide.pdf](https://www.nctsn.org/sites/default/files/resources//pfa_field_operations_guide.pdf)
- Levine, Peter. 2010. *In an Unspoken Voice: How the Body Releases Trauma and Restores Goodness*. North Atlantic Books
- Linklater, Renee. 2014. *Decolonizing Trauma Work: Indigenous Stories and Strategies*, Fernwood Publishing
- Maté, Gabor. 2011. *When the Body Says No: Understanding the Stress-Disease Connection*. Wiley

- Menakem, Resmaa. 2017. *My Grandmother's Hands: Racialized Trauma and the Pathway to Mending Our Hearts and Bodies*. Central Recovery Press
- Moseley, Juliana M. Cultural Humility. Online TEDx Talk video. <http://www.tedxwestchester.com/speakers-2/juliana-mosley/>
- Simmons, Dena. 2020. If We Aren't Addressing Racism, We Aren't Addressing Trauma. ASCD (formerly Association for Supervision and Curriculum Development). <https://www.ascd.org/blogs/if-we-arent-addressing-racism-we-arent-addressing-trauma>
- Winters, Mary-Frances. 2018. A Point of View: Let's Talk About Identity-Based Trauma. *The Inclusion Solution*. <http://www.theinclusionsolution.me/point-view-lets-talk-identity-based-trauma/>
- Van der Kolk, Bessel. 2015. *The Body Keeps the Score*. Penguin Books

### Trauma-informed education resources

- Trauma Informed Educators Network (podcast). <https://soundcloud.com/mathew-portell-93233744/episode-34-alex-shevrin-venet-trauma-informed-educators-network-podcast>
- Gaffney, Carrie. 2019. When Schools Cause Trauma, Teaching Tolerance (article). <https://www.tolerance.org/magazine/summer-2019/when-schools-cause-trauma>
- SHAPE (School Health Assessment and Performance Evaluation System). <https://www.theshapesystem.com>
- *Paper Tigers* (Amazon film rental). This movie follows a year in the life of a high school that has radically changed it's approach to disciplining its students, becoming a model for how to break the cycles of poverty, violence and disease that affects families. <https://www.amazon.com/Paper-Tigers-Jim-Sporleder/dp/B01KKYE5II>
- An Inside Look at Trauma-Informed Practices at an Elementary School (article). Edutopia. <https://www.edutopia.org/article/inside-look-trauma-informed-practices>
- Addressing Race and Trauma in the Classroom: A Resource for Educators. The National Child Traumatic Stress Network. 2017. [https://www.nctsn.org/sites/default/files/resources/addressing\\_race\\_and\\_trauma\\_in\\_the\\_classroom\\_educators.pdf](https://www.nctsn.org/sites/default/files/resources/addressing_race_and_trauma_in_the_classroom_educators.pdf)

### Fire and trauma resources

- Wildfire Resources (website). The National Child Traumatic Stress Network. <https://www.nctsn.org/what-is-child-trauma/trauma-types/disasters/wildfire-resources>
- Wildfire Response and Recovery (article). LA Unified School District. <https://achieve.lausd.net/Page/14239#spn-content>
- Helping Children After a Wildfire: Tips for Parents and Teachers (article). National Association of School Psychologists. <https://www.nasponline.org/resources-and-publications/resources-and-podcasts/school-climate-safety-and-crisis/natural-disaster-resources/helping-children-after-a-wildfire-tips-for-parents-and-teachers>

- Parent Guidelines for Helping Children Impacted by Wildfires (article). The National Child Traumatic Stress Network.
  - Spanish: <https://www.nctsn.org/resources/guia-para-padres-con-hijos-que-han-sido-afectados-por-incendios>
  - English: <https://www.nctsn.org/resources/parent-guidelines-helping-children-impacted-wildfires>
- Ippen, Chandra Ghosh and Melissa Brymer. 2017. *Trinka and Sam and the Big Fire*. Substance Abuse and Mental Health Services Administration (SAMHSA), US Department of Health and Human Services (HHS) (Children's book). [https://www.nctsn.org/sites/default/files/resources//trinka\\_sam\\_the\\_big\\_fire.pdf](https://www.nctsn.org/sites/default/files/resources//trinka_sam_the_big_fire.pdf)

## References

- <sup>i</sup> Silver, R.C., Holman, E.A. and Garfin, D.R. 2021. Coping with cascading collective traumas in the United States. *Natural Human Behavior* 5:4–6.
- <sup>ii</sup> Substance Abuse and Mental Health Services Administration (SAMHSA), 2014. *SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*.
- <sup>iii</sup> Trauma Informed Oregon, [What is Trauma?](#) Online, accessed 6/21
- <sup>iv</sup> Levine, Peter. 2008. *Healing Trauma*. Sounds True.
- <sup>v</sup> PACES Connection. [3 Realms of ACEs](#). Accessed August 2021
- <sup>vi</sup> National Child Traumatic Stress Network, [Resilience and Child Traumatic Stress](#). Accessed August 2021
- <sup>vii</sup> Maul et al. 2019. Genetics of Resilience: Implications from a Genome-Wide Association Studies and Candidate Genes of the Stress Response System in Posttraumatic Stress Disorder and Depression. *American Journal of Medical Genetics*, Vol 183 (2), pp.77-94.
- <sup>viii</sup> Centers for Disease Control and Prevention, [Risk and Protective Factors](#). Accessed September 2021.
- <sup>ix</sup> Adapted from [Supporting Students Experiencing Childhood Trauma: Tips for Parents and Educators](#), National Association of School Psychologists. Accessed September 2021.
- <sup>x</sup> Substance Abuse and Mental Health Services Administration (SAMHSA). 2014. *Trauma-Informed Care in Behavioral Health Services*.
- <sup>xi</sup> Adapted from Understanding Collective Trauma: The First Step Toward Healing. Tulane University. 2020. <https://socialwork.tulane.edu/blog/collective-trauma>
- <sup>xii</sup> American Psychological Association. 2019. *The Legacy of Trauma*. Vol. 50 (2)
- <sup>xiii</sup> Department of Justice Office for Victims of Crime. [Vicarious Trauma Toolkit](#). Accessed January 2021.
- <sup>xiv</sup> EdSource. [Even when the smoke clears, schools find student trauma can linger](#). Accessed January 2021.
- <sup>xv</sup> National Association of School Psychologists. [Helping Children After a Wildfire: Tips for Parents and Teachers](#). Accessed January 2021.
- <sup>xvi</sup> National Child Traumatic Stress Network. [Age-Related Reactions to a Traumatic Event](#). Accessed January 2021.
- <sup>xvii</sup> National Child Traumatic Stress Network. [Understanding Child Trauma](#). Accessed June 2021.
- <sup>xviii</sup> The Center for Adolescent Studies. [Trauma and the Brain: An Introduction for Professionals working with Teens](#). Accessed June 2021.
- <sup>xix</sup> National Institute for the Clinical Application of Behavioral Medicine. [A Quick and Simple Way to Think about the Brain](#). Accessed June 2021.
- <sup>xx</sup> Trauma Informed Oregon. 2013 [The Trauma-Informed Brain](#).
- <sup>xxi</sup> Van der Kolk, Bessel. 2015. *The Body Keeps the Score*. Penguin Publishing Group.
- <sup>xxii</sup> The Mighty. [Fawning: The Fourth Trauma Response We Don't Talk About](#). Accessed January 2021
- <sup>xxiii</sup> Psychology Today. [Understanding Fight, Flight, Freeze, and the Fawn Response](#). Accessed June 2021.
- <sup>xxiv</sup> The National Child Traumatic Stress Network. 2008. *The Neurobiology of Complex Trauma*.
- <sup>xxv</sup> Levine, P. 2010. *In an Unspoken Voice—How the Body Releases Trauma and Restores Goodness*. North Atlantic Books.

- <sup>xxvi</sup> Strengthening the Connection Conference Session. Oct. 25, 2013. Dr. Gabor Maté. [Neuroplasticity and Education](#) at the University of British Columbia.
- <sup>xxvii</sup> EduTopia. [Neuroplasticity: Learning Physically Changes the Brain](#). Accessed January 2021.
- <sup>xxviii</sup> National Institute for the Clinical Application of Behavioral Medicine, [How Does Neuroplasticity Work?](#) Accessed January 2021.
- <sup>xxix</sup> Trauma Informed Oregon. [Module 3: Trauma Specific, Trauma Sensitive, Trauma Informed](#). Trauma Informed Care Training Modules. Accessed August 2021.
- <sup>xxx</sup> Buffalo Center for Social Research, University of Buffalo. [What is Trauma-Informed Care?](#) Accessed January 2021.
- <sup>xxxi</sup> Substance Abuse and Mental Health Services Administration (SAMHSA). [Trauma-Informed Care in Behavioral Health Services](#). Accessed January 2021.
- <sup>xxxii</sup> Trauma Informed Oregon. [TIC and Equity: What's the Relationship?](#) Accessed January 2021.
- <sup>xxxiii</sup> Washington State ACE's & Resilience Community of Practice. [Framing the Crossroads of Trauma-Informed Care and Equity](#). Accessed January 2021.
- <sup>xxxiv</sup> The New Social Worker. [Ethics Alive! Cultural Competence, Awareness, Sensitivity, Humility, and Responsiveness: What's the Difference?](#) Accessed October 2021.
- <sup>xxxv</sup> US Department of Justice—National Institute of Corrections. [Trauma-Informed Care and Trauma-Specific Services: A Comprehensive Approach to Trauma Intervention](#). Accessed January 2021.
- <sup>xxxvi</sup> National Association of School Psychologists. [Trauma-Informed Care in Schools: A Social Justice Imperative](#). Accessed September 2021.
- <sup>xxxvii</sup> ASCD. [If We Aren't Addressing Racism, We Aren't Addressing Trauma](#). Accessed September 2021.
- <sup>xxxviii</sup> ACES Aware . [Principles of Trauma-informed Care](#). Accessed August 2021.
- <sup>xxxix</sup> EduTopia. [The Role of Emotion Co-Regulation in Discipline](#). Accessed January 2021.
- <sup>xi</sup> CYE NET—Working Professionally with Children and Youth. [Calming Together: The Pathway to Self-Control](#). Accessed January 2021.
- <sup>xii</sup> Collaborative for Academic, Social, and Emotional Learning (CASEL). [Overview of SEL](#). Accessed January 2021.
- <sup>xiii</sup> Adapted from [Trauma Informed Care in the Classroom](#). Trauma Informed Oregon. Accessed January 2021.
- <sup>xliii</sup> Project Learning Tree, [plt.org](#).