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# Proposing a "Choose Your Own Adventure" Mindfulness Intervention for Children with Autism Spectrum Disorder

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PROPOSING A “CHOOSE YOUR OWN ADVENTURE” MINDFULNESS INTERVENTION FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

BY

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ABSTRACT

Autism Spectrum Disorder is a neurodevelopmental disorder characterized by social and communication deficits, restricted interests (i.e., special interests), and repetitive behaviors. Individuals diagnosed with Autism Spectrum Disorder tend to display difficulties with attention and emotion regulation. Mindfulness meditation has been proven to be an effective in ameliorating several symptoms of Autism Spectrum Disorder. This project consists of a literature review on Autism Spectrum Disorder and Mindfulness, followed by an original contribution to practice in the form of a "Choose Your Own Adventure" mindfulness intervention. This intervention is designed to incorporate special interests common in Autism Spectrum Disorder into mindfulness meditation as a unique attention and emotion regulation tool.

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## Section I: Introduction

Autism Spectrum Disorder is a neurodevelopmental disorder with a diverse symptomatic presentation. Characteristic of Autism are deficits in social interaction and communication, as well as a pattern of repetitive behaviors and/or restricted interests (American Psychiatric Association, 2013). Children diagnosed with Autism oftentimes have co-occurring difficulties that contribute to the exacerbation of the aforementioned behavioral profile. These difficulties include issues with emotional and attentional regulation, other executive functioning impairments (Berenguer, Roselló, Colomer, Baixauli, & Miranda, 2018), and a lower quality of life (Lecavalier, Leone, & Wiltz, 2006).

As stated in Criterion B for Autism Spectrum Disorder within the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013), individuals with autism are inclined to develop highly specific and fixated interests (Jung & Sainato, 2015). Often referred to as "special interests," these interests, if present, are generally of the utmost importance to individuals on the Autism Spectrum. This project aims to propose an original contribution to clinical practice in the form of a unique mindfulness meditation intervention centered on common special interests observed in Autism Spectrum Disorder. Research shows that mindfulness has been proven efficacious in ameliorating several symptoms related to Autism Spectrum Disorder (Hyman & Levy, 2011). Ideally, the proposed mindfulness intervention will be effective in enhancing emotional and attentional regulation in children with Autism, thereby creating a tool that children will want to revisit as necessary.

Often when therapeutically treating a child on the Autism Spectrum, their special interests may become a barrier in treatment, as the child becomes engrossed in that interest and is perhaps unable to cope with the transition from this preferred topic to therapeutic work. Clinical tools, such as the proposed intervention, which utilize special interests centrally in treatment can be revolutionary to therapeutic progress. When therapeutic work can take place in a setting that values what is most important to the child, a child may engage in therapy more readily due to sheer enjoyment (Jung & Sainato, 2015; Kryzak & Jones, 2015; Grove, Roth, & Hoekstra, 2016; Charlop-Christy & Haymes, 1996).

This project begins with a literature review on Autism Spectrum Disorder, mindfulness practices, and the utility of treating symptoms of Autism with mindfulness meditation. Following the literature review is a description of the proposed intervention, as well as examples of how it has been utilized in practice. Finally, future directions and implications are discussed.

## Section II: Literature Review

### Methods for Literature Review Search

The literature review for this project was conducted utilizing the Eastern Kentucky University (EKU) library website, specifically the database PsychINFO. The following literature review was necessary in order to explore Autism Spectrum Disorder, mindfulness, and the efficacy of utilizing mindfulness to ameliorate and treat symptoms shown by individuals diagnosed with Autism Spectrum Disorder. Peer reviewed research studies, including both quantitative and qualitative data, were sought out, as well as other academic papers. The literature review was further utilized to review social validity practices, member checking, and treatment of Autism and other disorders using technology and/or smartphone application tools.

Key words regarding the aforementioned topics were utilized in the search for relevant journal articles, including: Autism Spectrum Disorder, mindfulness meditation, meditation, Autism Spectrum Disorder and mindfulness, Executive Functioning and mindfulness, Quality of Life and Autism, Autism and restricted interests, Autism and special interests, and more. Journals cited in this literature review include: *Research in Developmental Disabilities, Clinical Psychology: Science and Practice, Journal of Child and Family Studies, Journal of Autism and Developmental Disorders, Journal of Clinical Psychology, Journal of Policy and Practice in Intellectual Disabilities, Journal of Intellectual and Developmental Disabilities, Journal of Developmental and Physical Disabilities, Journal of Intellectual Disability Research, Journal of Clinical Psychology in Medical Settings, Journal of Contextual Behavioral Science,* and others. Books

written on the topics of Autism Spectrum Disorder and mindfulness were also included in the literature review.

## Introduction to Autism Spectrum Disorders

Autism Spectrum Disorder (ASD) is a neurodevelopmental disability characterized by social communication deficits, restricted interests, and repetitive behaviors. Autism has its official clinical origin within the Diagnostic and Statistical Manual of Mental Disorders—Third Edition (American Psychiatric Association, 1980) although several accounts of what would become known as autism were described beforehand by Leo Kanner (Aspy & Grossman, 2012) and Hans Asperger (Asperger & Frith, 1991). In his article "Autistic Disturbances of Affective Contact" written during his professorship at Johns Hopkins University (1943), Kanner described eleven children who shared similar "syndromic" features, including a preference for objects rather than other people, aversion to overwhelming sensory stimuli (e.g., loud noises), echolalic tendencies and non-communicative speech, fascination with particular objects, inflexibility, and stereotyped movements of extremities. Kanner proposed that these shared characteristics were unique to their own syndrome most notable in the children's "inability to relate themselves in the ordinary way to people and situations from the beginning of life." In other words, the syndromic characteristics Kanner was describing differed from other known childhood disorders at the time (e.g., Childhood Schizophrenia) in that differences between these children and their peers were observed from the early developmental period. Working in Vienna in a similar time period (1944), Asperger wrote about "a particularly interesting and highly recognizable type of child" (Asperger & Frith. 1991). The children Asperger described displayed differences

in behavior, emotional expression, and most notably, "social integration." Importantly, although Asperger and Kanner seemed to work independently, Asperger, too, emphasized the differences between the children he was describing and the children who had known psychological illnesses at the time (Asperger & Frith, 1991). Asperger claims to utilize Eugen Bleuler, a then prominent Swiss psychiatrist, as inspiration for the term "autism." Asperger writes of Bleuler's research and documentation of his schizophrenia patients and their demonstration of "autistic" thinking, referring to a thought process that is not goal-directed. A constituent of autistic thinking was a ubiquitous neglect for social contact, which Asperger highlights as contrasting from childhood schizophrenic patients. While Autistic children show a lack of social integration early in their developmental period, childhood schizophrenic patients typically presented as social early in development and then slowly withdrew from others as schizophrenia progressed. Most paramount in Asperger's original work is perhaps his statement that Autism "affects all expressions of [a child's] personality and can explain their difficulties and deficits as well as their special achievements. Once one has learnt to pay attention to the characteristic manifestations of autism, one realizes that they are not at all rare in children, especially in their milder forms" (Asperger & Frith, 1991).

In the DSM-III, Autism Spectrum Disorder was originally termed "infantile autism," in which symptoms of lack of responsiveness to others, deficits in language development, peculiar speech patterns (including echolalia), "bizarre" responses to the environment (e.g., resistance to change, attachment to objects) were present before thirty months of age (American Psychiatric Association, 1980). Although

approximately forty years after Kanner's (1943) descriptions of autistic children was published, it is clear that the DSM-III takes into account Kanner's ideology positing autism as a unique disorder. In a later edition of the DSM-III, the DSM-III-R, the diagnosis of infantile autism was instead termed "autistic disorder" with greater specificity, which included previously identified symptoms (Mazurek, Lu, Symecko, Butter, Bing, Hundley, Poulsen, Kanne, Macklin, Handen, 2017). Also included in the DSM-III-R was a diagnosis of Pervasive Developmental Disorder, Not Otherwise Specified (PDDNOS), which characterizes a child who has some autistic features but who may not meet full criteria (Mazurek, et al., 2017). The DSM-III-R diagnostic criteria for Autistic Disorder and PDDNOS can be found in the appendix at the end of this document.

With further renditions of the DSM came broader definitions of autism that represented a specific pattern of behavior despite the varied symptom intensity among affected individuals. The DSM-IV defined a broad spectrum of diagnoses that fell under the category of pervasive developmental disorders (American Psychiatric Association, 1994) and some believe this conceptual and diagnostic transition was one contributing factor to the upward trajectory in diagnoses seen in recent years. Within the DSM-IV, several disorders were included to represent individuals with autistic characteristics across varied symptom presentations. These disorders included Autistic Disorder and Pervasive Developmental Disorder, Not Otherwise Specified, which were included in earlier versions of the DSM (American Psychiatric Association, 1987). Also included was Asperger's Syndrome, which encompassed a "higher functioning"

version of autistic disorder; the DSM-IV diagnostic criteria for Asperger's Syndrome can be found in the appendix of this document.

In the transition to the current edition of the Diagnostic and Statistical Manual of Mental Disorders, there was disagreement between professionals, family members, and individuals with autism (and the former diagnosis Asperger's Disorder) concerning adequate recognition of developmental challenges and service provision against overdiagnosis and pathologizing (Mazurek et al., 2017)). The most current edition of the DSM, the DSM-5 (American Psychiatric Association, 2013), puts forth criteria for Autism meant to incorporate each iteration of the disorder. Contested was the decision to forgo the inclusion of Asperger's Syndrome within the DSM-5. The following are the DSM-5 (American Psychiatric Association, 2013) criteria for Autism Spectrum Disorder:

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by all of the following, currently or by history:
    1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
    2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body

language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history:

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexibility adherence to routine, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures,

excessive smelling or touching or objects visual fascination with lights or movement).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of functioning.

E. These disturbances are not better explained by intellectual disability or global developmental delay.

These diagnostic criteria improve diagnostic specificity regarding Autism Spectrum Disorders, increasing the likelihood that individuals diagnosed will be better matched to necessary treatment programs at home, school, and within the community.

## Difficulties Often Associated with Autism Spectrum Disorders

In addition to the above symptomology, Autism is often accompanied by a sequela of other challenges as well as co-occurring disorders, including executive dysfunction, anxiety and depression, and behavioral and emotional dysregulation. Attentional issues, along with hyperactivity and impulsivity, are common in ASD; Attention Deficit Hyperactivity Disorder (ADHD) is often diagnosed alongside ASD (American Psychiatric Association, 2013). It is suspected that between 30-50% of individuals diagnosed with ASD show symptoms related to ADHD; in clinical samples, that percentage increases to 85%. If left untreated, the combination of these symptoms can lower the quality of life in an individual, causing increased social isolation,

behavior and emotional problems, and decreased performance in school and other areas of life (Leitner, 2014).

Autism impairs executive functioning in an affected individual. Executive functioning is the brain's ability to perform high-order cognitive processes, including problem-solving in several areas: attention, emotion regulation, flexibility, inhibitory control, initiation, organization, planning, self-monitoring, and working memory (Berenguer, Roselló, Colomer, Baixauli, & Miranda, 2018). Children with autism may show inflexibility in their strict adherence to routines and their difficulty with task-switching. With heightened ADHD-related symptoms, impairment may also be present in attention, inhibition, planning, and organization.

Autism is also often characterized by emotion dysregulation. Without proper coping mechanisms, even a seemingly small emotional trigger can become too much to handle for an individual with ASD. According to the transactional stress model, overstimulation without proper coping can lead to further emotional and mood difficulties, including anger, depression, and anxiety (Ridderinkhof, Bruin, Blom, & Bögels, 2018). Untreated (or improperly treated) emotion regulation problems in conjunction with the eventual outcomes put forth by the transactional stress model may be a good explanation as to why children with ASD tend to suffer from a greater number of emotional and behavioral problems than their peers. It follows that proper coping strategies must be utilized to support treatment, daily living, and optimal emotional functioning when treating children with autism.

Because of the aforementioned difficulties, not only can the quality of life for the individual be affected, but also the quality of life for the family with a child on the

Autism Spectrum may be impacted (Lecavalier, Leone, & Wiltz, 2006). According to the World Health Organization (1998), quality of life is defined as "individuals' perceptions of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns." A family's culture and their expectations for their children may go hand-in-hand when perceiving their own quality of life. When this relationship is strained or altered, quality of life may be perceived as lower. Specific to the current project, perhaps that strain is Autism Spectrum Disorder or another form of psychological disorder. For example, a family housed in a culture who may condemn or ignore mental illness and hold their own children to rigid expectations may perceive themselves as more impacted by the presence of Autism in their family than a family who may seek services for relevant mental health concerns, and who are flexible regarding the achievements of their children. When reckoning familial quality of life for a family with a child on the Autism Spectrum, many considerations must be made including parental stress, individual characteristics of the affected child, and applied intervention strategies (Hsiao, 2018).

Parental stress plays a critical role in the perception of familial quality of life. Parents of children with Autism Spectrum Disorder report several stressors, such as time-related constraints due to caring for their child, ensuring the child receives proper services, hoping for a "different life" for their child, and feelings of anxiety and helplessness (Marsack-Topolewski & Church, 2019). Further contributing to parental stress are child behavioral problems, Autism Spectrum Disorder severity, and the adaptive functioning level of the child (Hsaio, 2018). In addition to parental stress, the

child's own well-being certainly impacts the familial quality of life. Children with Autism Spectrum Disorder are more likely to experience anxiety, depression, and/or behavioral problems than their peers. As such, it would follow that supportive and successful intervention to reduce parental stress and mood, anxiety, and behavioral concerns in the child would increase familial quality of life. Indeed, research has found that it is imperative that children with Autism and their families be provided with resources to reduce familial and individual stress, thereby increasing familial quality of life (Jones, Bremer, & Lloyd, 2017).

## Autism Intervention and Special Interests

The answer to questions concerning how best to intervene in the course of autism, prevent/treat co-occurring and secondary conditions, and provide support for growth and quality of life for families and individuals on the spectrum is complex. As Autism is a disorder in which symptom presentation varies greatly, it is undeniable that treatment and support needs also vary greatly. There is not a "cookie-cutter" treatment to Autism Spectrum Disorder; a clinician must consider the issues that are most distressing to the client and their family. For the purpose of this project, the attentional problems and emotional dysregulation often present in Autism Spectrum Disorder will be the primary targets of the proposed intervention.

Furthermore, in regard to the specific criteria of Autism Spectrum Disorder targeted by the proposed intervention, the current project specifically addresses Criterion B of Autism Spectrum Disorder. In the DSM-5 criterion B for Autism Spectrum Disorder, it is stated that individuals with autism typically display "highly restricted, fixated interests that are abnormal in intensity or focus" (American

Psychiatric Association, 2013). Instead of targeting this criterion to ameliorate any sort of negative effect, within the current project Criterion B (often stated using the terms "special interest," "restricted interest," or "specific interest") is used to mitigate emotional and attentional dysregulation.

Among children diagnosed with Autism Spectrum Disorder, the exhibition of a special interest is one of the most commonly displayed characteristics (Jung & Sainato, 2015). Common special interests of those diagnosed with Autism include mechanical systems, dinosaurs, animals, vehicles, factual information, timetables, and technology (Anthony, Kenworthy, Yerys, Jankowski, James, Harms, Martin, & Wallace, 2013; Grove, Roth, & Hoekstra, 2016). Research shows that when working with a child diagnosed with Austism, incorporating their special interests into the intervention, materials, and procedures results in positive effects for children in several domains; this ensures easier compliance with difficult tasks, contributes to greater amounts of time performing on-task behavior, and facilitates learning (Jung & Sainato, 2015; Kryzak & Jones, 2015).

Special interests may be considered a reinforcing component to task completion, as the use or discussion of these interests is inherently pleasurable to the child (Charlop-Christy & Haymes, 1996). According to Jung and Sainato (2015) a child's verbal and nonverbal engagement in a task drastically increased when their special interest was incorporated, and Grove, Roth, and Hoekstra (2016) concluded that individuals on the Autism Spectrum are "motivated to engage in their special interest due to sheer enjoyment and excitement." Taken together, these findings suggest that if an intervention is designed in such a way to incorporate an individual's special interest, he

or she may be more inclined to learn, participate, and importantly, enjoy the task. Enjoyment of the therapeutic task can likely lend much to the ability of the child to generalize therapeutic work into their daily lives.

In order to increase task adherence and recurrent practice, the proposed intervention aims to incorporate several common special interests into a combined, unique emotional and attentional regulation product. The foundation of the intervention's emotional and attentional regulatory properties lies in mindfulness meditation.

## Introduction to Mindfulness

Mindfulness was not always considered a clinical intervention. Historically, mindfulness dates back to early Buddhist traditions of meditation (Ridderinkhof et al., 2018). Buddhists used mindfulness as a central role in the path ending personal suffering by "bringing a quality of attention to moment-by-moment experience" (Bishop et al., 2004). A more contemporary form of mindfulness is used in psychology to treat mental illnesses, including depression, anxiety, and substance use disorders (Maddock, Hevey, & Eidenmueller, 2017; Burke, 2010). Broadly, this form of mindfulness is incorporated into several forms of therapeutic intervention as a step in cultivating bodily awareness with the hope of honing in on and decreasing psychological illness as it manifests cognitively, emotionally, and physically (Bowen, Chawla, & Marlatt, 2011). Mindfulness is not only a stand-alone psychological treatment, but also a tool incorporated into other forms of treatment. Mindfulness-based interventions, such as yoga and guided imagery meditations, are increasingly utilized in conjunction with pharmacological regimens and other psychological treatments (Evans, Ling, Hill, Rinehart, Austin, & Sciberras, 2018). When treating children, mindfulness

is most often used as an aid in teaching deep breathing, bodily awareness, and emotion regulation (Galla, Kaiser-Greenland, & Black, 2016). Mindfulness helps a child respond more skillfully to stimuli that cause emotional distress and/or maladaptive behaviors (Bishop et al., 2004). Importantly, mindfulness and mindfulness-based interventions can help an individual lower emotional reactivity (i.e., emotion dysregulation) (Keng, Smoski, & Robins, 2011) and recover more quickly from heightened emotional states (Broderick, 2005).

Regardless of the "type" of mindfulness chosen, the goals remain the same: to notice the sensation of one's breathing; take notice of thoughts and feelings as they arise, but let them go; and to remain nonjudgmental about thoughts and feelings as they occur, as well as about one's capacity to wander cognitively (Bishop et al., 2004). The ultimate objective to practicing mindfulness within a therapeutic environment is so that the client can generalize the mindful attitude and attention to experiences outside of therapy sessions in order to respond to situations, events, and the self less reflexively (Evans et al., 2018). Crucially, research suggests that mindfulness-based practices can be effectively learned in frequent and brief exercises (Moore, 2008). In other words, practicing mindfulness once per day for just a few minutes can be effective in cultivating a more mindful attitude and less reflexive set of behaviors.

Bishop et al. (2004), proposed a two-component model of mindfulness, explaining its efficacy with treating mental illness. The first proposed component is self-regulating attention so that an individual's focus is on the present moment. This leads to an awareness of what is occuring within the body and mind in the here and now. Interestingly, the two-component model posits that skills in both sustained

attention and task switching (cognitive flexibility) are required in order to be successful with this first component; these are both aspects of executive functioning that are often impaired in Autism Spectrum Disorders, as discussed above. Efficacy in sustained attention allows an individual to maintain an awareness on the present moment and on their breath. Proficiency with cognitive flexibility, in the form of switching, allows the individual to refocus on the breath once a thought or feeling derails them. The model proposes that a regular mindfulness practice can assist in the development/improvement of the aformentioned executive functions, as well as improving cognitive inhibition.

The second proposed component of Bishop et al.'s (2004) two-component model of mindfulness is espousing a nonjudgemental attitude toward the present moment and toward one's thoughts, feelings, and experiences. If one can effortfully accept each thought or feeling that arrises, emotional distress could be perceived as less disagreeable, thus changing a subjective experience of distress into something tolerable. As it relates to executive functions, this component maps onto emotional regulation and inhibitory control. As a mindfulness practice is established, so too are emotional regulation skills and a greater ability to inhibit unhelpful reactions to emotions, thoughts, or experiences. The two-component model of mindfulness hypothesizes that once mindfulness skills are learned, they can be educed in any situation in which the practicer feels it necessary. For example, mindfulness can be used in a circumstance in which one perceives a great amount of stress will be elicited by their environment. Mindfulness helps a person respond more adaptively to their internal and external environments.

## Types of Mindfulness Meditation

When considering mindfulness as a clinical practice, there are typically several different interventions grouped under the umbrella term "mindfulness" (Morgan, Graham, Hayes-Skelton, Orsillo, &Roemer, 2014). The collective goal of these interventions is to increase breathing and bodily awareness in the present moment (Evans et al., 2018). For the purposes of this project, the mindfulness practices utilized include guided imagery meditation, progressive muscle relaxation, body scan, yoga, and power posing; these practices are described below.

Guided imagery is a form of meditation that utilizes the five senses to immerse an individual within a meditative scene (Trakhtenberg, 2008). Guided imagery includes exploration with imagination and fantasies but keeps the individual in the present moment through access to their senses. This form of meditation may look like guiding a client through a meditation about walking through a forest, sitting on a beach, or exploring a zoo, all the while prompting a client to be aware of their sense of touch, smell, sound, etc.

The focus of progressive muscle relaxation is to tense and relax different muscle groups in the body (Ghoncheh & Smith, 2004) that may typically become rigid and strained during periods of extreme emotion (e.g., anxiety). Progressive muscle relaxation can be centered on one muscle group, such as the fists or the shoulders, or can be done using the whole body to increase relaxation during mindfulness meditation. While performing the latter, an individual would be asked to tense and relax several muscle groups sequentially. Like other relaxation techniques, the intended therapeutic outcome of progressive muscle relaxation is to induce relaxation and regulate mood

(Hashim & Yusof, 2011). Of particular benefit with the practice of progressive muscle relaxation is the education of the individual about the contrast in how tense versus relaxed muscles feel. Ideally, as one's skill with progressive muscle relaxation progresses, he or she may begin to notice that in periods of extreme emotion their muscles may be tensed. He or she then signals to their body to relax tensed muscle groups, inducing a more relaxed feeling throughout the body and mind.

A body scan is a guided meditation that allows the practicing individual to become aware of bodily sensations by asking him or her to "scan" the body section by section. The goal is to note bodily sensations that may be correlated to thoughts and feelings. For example, a body scan could begin the following way: "Sit as comfortably as you can. I am going to ask you to focus your awareness on different parts of your body. Let's start with your feet. Notice how your feet feel. Do you notice any sensations of comfort or discomfort, tension, pain, or relaxation? Just simply notice with acceptance the way your feet feel, and stay with that sensation for a few minutes" (DeUrquiza, 2014). Similar instruction would then be given for the rest of the body.

Yoga includes practices in physical postures, regulated breathing, and meditation (Subramanya & Telles, 2009). When performing a yoga meditation, relaxation comes from sensations subsequent to the maintenance of a stretch or pose (Ghoncheh & Smith, 2004) while simultaneously maintaining proper breathing (Subramanya & Telles, 2009).

Power posing is just as it sounds—posing as if one has power. Though not always labeled as a mindfulness practice, power posing is considered such for the purpose of the current project. Power posing has been shown to increase feelings of

power and confidence, decrease anxiety and stress, and encourage performance of positive behaviors (Teh et al., 2017). The simplest visual for a power pose is the typical "superhero" pose, standing with one's feet spread apart and with hands upon the hips.

## Mindfulness and Autism Spectrum Disorder

While there are several treatment options for decreasing stress in children with Autism Spectrum Disorder, the current project focuses on mindfulness meditation and associated practices. Mindfulness and other mind-body therapies are assumed to be effective in treating symptoms related to ASD, including stress and anxiety, because they promote relaxation (Hyman & Levy, 2011). For instance, yoga has been associated with decreases in internalizing symptoms related to ASD and improved behavior when simultaneously treated with medication (Hyman & Levy, 2011). Utilizing mindfulness as a form of treatment for children with autism may benefit a child's ability to switch between tasks, their acceptance of changes in routine, and may reduce social communication and interaction problems (Ridderinkhof, Bruin, Blom, & Bögels, 2018).

In "Mindfulness-Based Program for Children with Autism and Their Parents: Direct and Long-Term Improvements," Ridderinkhof et al. (2018) employed MYmind, a mindfulness-based program for families with children on the Autism Spectrum. MYmind consisted of 9 weekly group sessions with parallel sessions for children and parents. Children learned to enhance their abilities to devote sustained attention to their bodies' sensations, feelings, and thoughts. Each session began with psychoeducation about mindfulness and its practice, then continued with mindfulness exercises rooted in Mindfulness Based Cognitive Therapy. Children and their families were taught several

mindfulness-related techniques, including breathing, body scans, and yoga; participants were encouraged to practice these techniques at home. As a result of the MYmind program, parents reported a significant decrease in their child's social communication problems, a decrease in internalizing symptoms, and a decrease in attention-related symptoms. This study is promising for clinicians who may choose to consider mindfulness as a treatment with a child who has Autism. It shows that even simple mindfulness techniques, such as the body scan or a deep breathing, can assist in ameliorating several ASD-related symptoms.

When treating any clinical patient, a person's intellectual capacity must be taken into account while choosing an appropriate treatment. "Surfing the Urge" (Singh et al., 2019) described an informal mindfulness practice to reduce aggression in 3 adolescents on the autism spectrum. Each adolescent was functioning at the Borderline Impaired range (IQ of 70 or below). Within this study, the mindfulness practice was relatively informal and unstructured; the participants were taught to notice anger-inducing triggers within their body (the "urge" to act on anger), to observe that urge nonjudgmentally, and then to bring attention to their breathing, using their breath as a "surfboard" to ride the urge as it flowed through them. As a result of regular practice, there was a decrease in verbal aggression (e.g., yelling, screaming, cursing, or threatening to cause physical harm) and physical aggression (e.g., kicking, hitting with a closed fist, biting, slapping, or punching). This study suggests that individuals functioning within the Borderline Impaired range of cognitive functioning, an impairment sometimes comorbid with a diagnosis of Autism Spectrum Disorder, can utilize mindfulness to decrease problematic symptomology.

Hart and Robbins (2013) described the efficacy of a creative mindfulness intervention in adults with a mild to moderate intellectual disability. Although Hart and Robbins' work was not explicitly related to Autism Spectrum Disorder, its conclusions and implications are important for this project. The researchers elected to employ a person-centered and creative approach to mindfulness-based therapy by incorporating the client's interests into sessions. They state, "What has become apparent during the course of our sessions is that to remain person centered and deliver support that is useful and appropriate, one must approach relaxation skills training with the emphasis on 'creativity.'" Hart and Robbins rationalized that creative, interests-based approach would encourage the use of and engagement with therapeutic techniques, allowing an individual to "take ownership" of their own improvement process. The participants were taught three basic mindfulness techniques: controlled breathing, guided imagery, and progressive muscles relaxation. Each participant was taught the same controlled breathing and progressive muscle relaxation exercises, but an individual's interests were introduced into guided meditation scripts once a basic understanding of the procedure was reached. For example, when using a color script, a participant's favorite foods were introduced to express colors. As a result of these practices participants reported a decrease in anxiety. Despite the focus on adult participants, these conclusions are promising and applicable for useful adaptation of creative mindful interventions with all individuals. The more a child is interested in what one is doing—whether it be in everyday life or in therapy—the more invested the child is likely to be. Importantly, as noted above, the use of a child's special interest in therapy, for children with ASD, was shown as efficacious in securing cooperation with intervention and with symptom

improvement (Jung & Sainato, 2015; Kryzak & Jones, 2015). It follows that mindfulness-based therapeutic interventions can be effective with children on the Autism Spectrum, especially if their interests are incorporated into meditations.

## Section III: Proposing a "Choose Your Own Adventure" Mindfulness Intervention

### General Description, Cost, and Marketing

The goal of the following proposed intervention is to use special interests common in children with Autism Spectrum Disorder as a basis for mindfulness meditation. Ideally, brief and repetitious meditation sessions will assist with attention and/or emotion regulation in the child with whom the intervention is being used. Mindfulness has been proven efficacious in decreasing symptoms related to Autism (Hyman & Levy, 2011); however, despite its utility, mindfulness may not be the "go-to" treatment when working with children on the Autism Spectrum. Even though one intent of mindfulness is to increase self- and body regulation (Bishop et al., 2004), mindfulness itself requires self- and attention-regulation capacities that may not be present or fully developed in a child with Autism Spectrum Disorder. Thus, the proposed intervention aims to "sell" mindfulness to a child with Autism by incorporating common special interests, to which children with Autism are intrinsically motivated to attend. This motivation to attend likely will help simulate the required regulation capacities during meditation and promote that simulation outside of meditations with repeated use. The intervention is designed to be performed in five-to-ten-minute time segments in which a child will listen to a mindfulness meditation of their choosing. An important point, as mindfulness can be effectively taught with brief and frequent practices (Moore, 2008), is that with repetition, the child will ideally learn emotion- and self-regulatory strategies through these five-to-ten minute segments. In other words, this product is designed to be used several times with a child; a single use will likley not produce the intended effects.

The proposed intervention takes the form of a book containing several different types of mindfulness-related meditations. The book is called "Choose Your Own Mindful Adventure: A Mindfulness Journey for Children with Autism Spectrum Disorders." The book can be used in therapeutic, classroom, and home settings, and can be read to a child or read by the child. This book is not specifically designed to be implemented by a trained mental health professional, although it can be. The book is designed to reach a broader audience, including families and educators. It is important to note that, although the book title says, "For Children with Autism Spectrum Disorders," it is likely that many children can benefit from this creative style of mindfulness meditation. When considering the audience of the book (i.e., who will be using it), the book is beneficial for anyone deemed developmentally appropriate. The reading level of the book is aimed toward elementary schoolers (grades kindergarten through fifth).

The book is separated into sections: "About this Book," "How to Use this Book" (instructions), and the meditations. The "About this Book" page briefly describes mindfulness and its rationale for use with children with an Autism Spectrum Disorder. The "How to Use this Book" page describes what to do in order to complete the "adventure." In other words, this section guides the reader to begin with the Introduction meditation, choose a "room" for the main meditation, and then end with the Exit meditation.

The book is formatted in a "choose your own adventure" format, in that it allows the child to choose which mindfulness meditation they would like to listen to (or read). It is important to note that the child will not be choosing the *type* of meditation they

would like to hear (e.g., body scan, guided imagery, etc.), but rather which meditation they would like to hear based on interest (e.g., space, farm, etc.). The different categories of mindfulness exercises, described in the "Types of Mindfulness Meditation" section, are represented across interests. For example, the Space Station room and the Skunk room are examples of guided imagery, while the Mouse room is an example of progressive muscle relaxation.

The book begins with an introductory meditation, meant to be read each time the book is utilized. Within this meditation, the child and reader (if applicable) are introduced to a hallway in which there are a number of doors. This brief meditation is meant to help shift the child into a mindful "mode" by initiating deep breathing. At the end of the introductory meditation, the child is asked which room they want to enter, prompting the child to choose their own adventure. Each room represents a common special interest seen in Autism Spectrum Disorder and, thus, each room offers a unique adventure to the listener and/or reader. Ideally, the different adventures/rooms available to the child will be displayed using a small, unique illustration per room via a tab system on the side of the book. This system will be beneficial because it allows the child to choose a meditation without referring to the table of contents to find page numbers for requested meditations. The tabulated system is also preferred because it does not require reading ability or verbal production. After choosing an adventure/room, the child is guided through their chosen meditation. Once finished, an exit meditation is provided in order to end the mindfulness experience; as with the introductory meditation, the exit meditation is meant to be read each time the book is used. The exit meditation reminds the child that they can revisit their chosen room (and

the book) whenever they need. Because the meditations chosen will hopefully be meaningful to the child, the child will be able to take charge of their own mindfulness experience, increasing the likelihood that they will practice again. The illustrated tab structure of the book, as well as the routinized order of meditations (i.e., Introduction, specific room, Exit) may increase the book's effectiveness with children on the Autism Spectrum, as a concrete, predictable structure is often preferred by these children (Blanc, Adrien, Roux, & Barthélémy, 2005).

As mentioned above, "Choose Your Own Mindful Adventure" will have a tab system in order to easily choose where a reader would like to go within the book. This means the book needs to be created with thick paper or board-book-like pages so that the tabs remain adhered to the book even with wear-and-tear. The book will be a rectangular shape, approximately ten inches by eleven inches in area, with colorful illustrations on the cover and on each page.

Creating a physical prototype of this book (i.e., what it will actually look like, not as it is printed in the following subsection) will cost between twenty and one hundred dollars, depending on the service used. After creating a prototype, the author needs to contact publishers and market the book. Instead of independently publishing the book, the author will seek a publisher who has published similar books in the past, so that their readers may be readily exposed to the book. Going through a publisher also has other positives, including placing the book in their catalogs, sending out a news release with review copies, posting information about the book on their websites, and connections with distributors and retailers (Larsen, 2011).

## Product Prototype

Below, each section of the proposed intervention is described and presented. A complete prototype (without descriptions) can be found in Appendix C at the end of this document.

### *About this Book*

What follows is what will prospectively be written on the "About this Book" page. Please note that the language used is aimed toward an elementary reading level in each of the following sections.

"Have you ever felt very sad or frustrated or so excited that you had a hard time calming down? This book can help! This book uses different types of mindfulness meditation to help you cope with emotions and everyday life. Mindfulness has been shown to help decrease sadness, worries, and busy thoughts. By using mindfulness and going on fun adventures, you can learn to breathe better and pay attention to your body while calming down. Even when you are feeling happy and calm, you can use mindfulness to continue along that path."

### ***How to Use This Book***

What follows is what will likely be written on the "How to Use this Book" page:

"Let's get started on our mindful adventure! Start with the introductory meditation on the "Introduction" tab. After listening to (or reading) the introductory meditation, choose any meditation that you might be interested in. Then, flip to that page and start your adventure! For example, if you are feeling silly, choose the skunk tab to hear about a skunk carnival while calming your body. If you like dinosaurs and feel like you need to move, choose the dinosaur tab for fun yoga poses! After you

choose your adventure tab, finish with the "Exit" tab to wrap up your mindfulness journey. Come back to your book anytime you need it!"

*Introduction Meditation*

Below find the Introduction meditation, which is meant to be read as one begins each usage of the book.

"Let's go on a journey.

First, let's make sure you are breathing nice, deep breaths. Breathe in deeply… and now breathe out slowly. Let's do it again. Breathe in… and breathe out. Great job! Continue breathing deeply as you listen and imagine my words.

Pretend you are in a big, stone hallway, perhaps in a palace or a fort. Notice the feeling of the hard stone under your feet. Know that no matter what sensation you are feeling, it will come and go.

As you walk down the hallway, you notice that there are doors along the wall, each labeled with something magical. Walk slowly, knowing that there are grand adventures waiting for you beyond the doors.

Take a deep breath in… and let it out slowly.

Which room will you choose today?"

*Adventure Meditations*

Each meditation representing a room/tab within the book written below.

**Space Station. "**Continue to breathe normally now as I guide you on this marvelous adventure!

You enter the space station.

As you sit in the captain's chair, notice your body instantly relax. Allow your body to sink down into the chair further and further, as your muscles become soft and limp. It feels so comfortable.

Your body seems to relax more and more with each and every word you hear.

Imagine now a small sparkle somewhere deep in space. You see it outside the giant window along one side of the space station. The small sparkle begins to glow brighter now, and you see it reaching up and expanding out. You realize it's a star! Can you imagine the bright lights?

As the star becomes brighter, you are breathing deeply. Soon, the star bursts, and sends a gentle shower of fireworks through space. Aren't you lucky to be able to witness something so beautiful inside your space station?

As the fireworks sizzle and flare down, imagine all of your bad feelings sizzling out too. Can you hear the "sssttt" of them sizzling out?

Take a deep breath, like you're breathing in the remaining glow of the star. All the good feelings you have are expanding in your body, just like the star expanded in space!"

**Skunks. "**Continue to breathe normally now as I guide you on this wonderful adventure!

You walk through the door to find yourself outside in a magnificent forest. Notice the beautiful colors of the trees all around you, and the sounds the birds make as they chirp. Isn't it wonderful?

After taking a few steps along the path, you notice a strange smell accompanied by a strange noise. You follow the path further and slowly walk toward the sound. As

you come to the path's end, you see a small animal den and the biggest skunk you've ever seen! He is making something… What could it be? You walk over, remaining as calm as you can. You notice Mr. Skunk has just made a bag of cotton candy, and over the hill you see a park, full of rides and other skunks just like Mr. Skunk!

As you watch Mr. Skunk walk away, you take a seat on the cool ground to enjoy the scene below. Feel the grass on your hands and the wind blowing across your face. Notice how your thoughts and feelings come and go, reminding yourself that frustrations are not permanent.

Listen as the carnival music fills the air and smell the kettle corn and candy apples!

Take a deep breath. Here, notice what it feels like to be calm and happy. The sound of the happy skunks below make you smile. Your mind is clear of frustration, and you know that when you feel upset you can visit the skunks here in the forest."

**Train. "**Continue to breathe normally as I guide you through this great adventure!

You step through the big, stone door and onto soft green grass. Notice what the air feels like as a cool, crisp breeze blows across your body and through the trees all around you.

While the breeze blows, you notice a sound. At first, you think it's just the wind. A moment passes, and the noise stops and then starts again. What a curious breeze that would be. You decide to investigate. You walk through the tall trees, and into a clearing. You notice an old, wooden building a short distance away. You take in a long, deep breath… and blow out an even longer one!

You walk toward the old, wooden building. Notice the sun on your face and what the heat feels like on your skin. What sensations tell you that you're warm? A smile creeps across your face as you think of happy times that provide you with a different sort of warmth-- a warmth of your heart.

Finally, you reach the building. Inside, you hear that curious sound you heard just a short time ago, but this time, it's much louder! Around the corner, you notice a big, blue train. The train is blowing his horn and seems to have become stuck on the old track. He seems sad. You walk over, remembering the warmth that the sun brought to you, and pat the train. Feel the hard engine under your fingertips. Is the train's metal cool or warm? In time, you help the train become un-stuck. As you watch him roll away, you remember your warmth. You realize that this is a place you can come when you feel sad or upset to remember all the happy times you've had. Smile and breath."

**Airplane. "**Continue to breathe normally as we fly through this adventure…

As you step into the room, you notice a cool breeze wash over your body. You close your eyes and breathe in slowly, like the wind is filling your body with air. Slowly, you blow out the air as if you are blowing up a big balloon.

Once you have finally released your big breath, you take a look around. The sun is warm on your skin. What sensations tell you that you are warm? You hear a low rumbling sound. You wonder what it is, but you listen for a while, letting your ears settle on the noise for a few deep breaths. Then, your eyes finally land on what is in front of you--It's a giant plane, almost ready to take off! Your senses are so happy you are taking the time to notice the moment.

You walk toward the plane ready to embark on an adventure. Notice how you feel in your mind right now? Are you excited? Nervous? Take a moment to feel and breathe.

Notice how you feel in your body right now. Are your hands shaking? Is your breathing fast or slow? Realize that no matter what sensation you are feeling it will come and go.

You board the plane. As you sit in the pilot's seat, you realize that this plane was specially made just for you. The seat feels snug and warm. You breathe in and out slowly as you reach forward and prepare for takeoff. You know exactly what to do. How wonderful is it that your plane is here for you when you need to calm down or escape something for a while? You remember that you can rid yourself of big or negative feelings by breathing and taking flight. Smile, and take off."

**Mouse. "**Keep breathing deeply as I guide you on this adventure.

After walking through the doorway, you find yourself in a large, open room. It's breezy here, and you feel the cool air on your face. You begin walking around the room. It is round and brick. The sun shines through the windows; notice how it heats your skin. Along one wall of the room, you see a shiny mirror. It's strange, but in the reflection, you do not see yourself, but instead you see a tiny mouse. You look down and discover that you have furry hands and a big, curly tail! You must have turned into a mouse as you entered this room. How wonderful!

You sit down against the cool wall, with your new mouse legs stretched out. With your hands in your lap and your eyes closed, you take a big deep breath in… and then breathe out. Let's explore the way your muscles work in your new mouse body.

You squeeze your tiny mouse toes… and release them. Notice the way your toes feel tensed and relaxed. Do the same for other parts of your mouse body. Squeeze your mouse legs... and release them. Squeeze your mouse tummy… and release it. Squeeze your small mouse fists… and release them. You are doing a great job! Squeeze your mouse arms… and release them. Squeeze your mouse shoulders up toward your ears… and release them. Last, squeeze your little mouse face. Make sure to wiggle your nose! Release your mouse face muscles. Notice the way your body feels as it is completely relaxed. You know that this is what it feels like to be free of worries, and you remember that when you feel worried, you can make your body relax by remembering the magical time you became a mouse.

The mouse room is a place you can come whenever you feel tense, nervous, or worried. Becoming a mouse and relaxing your muscles helps you become less nervous or stressed. You take a deep breath and loosen all your muscles one last time."

**Superhero.** "Make sure you are standing in front of a mirror for this one!

Take a big, deep breath in… and let it out slowly. You see yourself in the mirror. Imagine yourself as a superhero. What would you look like? Would you look the same? Would you look very different?

Place your hands on your hips, making triangles with your arms at the side of your body. Stand tall, with your feet wide apart. There, now you really look like a superhero! Imagine your superhero outfit. Your long cape flows majestically as you stand powerfully. Let the confidence flow through your body. Say to yourself, "I can do anything, I am a hero." Believe it, because it's true! Take a few deep, heroic breaths

as Superhero You. Realize that you have been a superhero all along, and you will continue to be one as long as you repeat, "I can do anything, I am a hero."

**Dinosaur.** Please note that this meditation involves yoga, and there will be pictures to aid the reader with the meditation.

"Make sure you have space to move around for this adventure!

As you step through the doorway, you notice that you are in a big, open field filled with dinosaurs. You must have traveled back in time! The dinosaurs seem to be very relaxed—they are all in the field stretching their normal dinosaur stretches. Let's try to be as relaxed as the dinosaurs.

First, let's see if we can be just like the brachiosaurus. Get down on your hands and knees. Make sure your hands are right under your shoulders and your knees are right under your hips. Now, take a deep breath and then dip your stomach down and stretch your long, brachiosaurus neck up to the sky. Great job! Now, do the opposite by arching your back to the sky and reaching your chin toward your chest. Take a deep breath in and dip your stomach again, stretch your neck, and breathe out a big dinosaur roar! Nice!

Now, let's stand straight up. Let's see if we can be a peaceful velociraptor. Take a deep breath in and lift your right leg up, hugging it into your chest. Balance takes practice! Step your right leg down and do the same with you left leg. Good!

Last, but not least, let's try to be like the triceratops. Stand up straight like a tree. Now, lift your arms way up in the sky, like they are two of the horns on a triceratops's head. Reach as high as you can, while breathing deeply. Lean your head

back slightly, allowing your nose to become the third horn. Stay like this for a few deep breaths.

Isn't it so neat that we can go back in time just for a few minutes to practice our dinosaur stretching?"

**Farm.** "Continue to breathe normally as I guide you on this exciting adventure.

You step through the door, immediately hearing the crunch of crisp grass underneath your feet. You notice the sun high in the sky. Do you feel the warmth on your skin? Take a deep breath in… and a long breath out. You begin walking to take a look around this new, fantastic place. The path ahead of you looks well-worn with footprints… but these footprints do not look like yours! Animals must walk this path! You continue forward, and find yourself in a pasture, full of grazing sheep. They are fluffy and white, and they look so nice. You slowly walk through the field, calmly passing the sheep, careful not to disturb them. Once through the pasture, you come upon a big, red barn. Inside, you hear familiar animal sounds. Instead of walking inside, you decide to take a seat on the nice, soft grass. As you lean against the barn, you close your eyes and take a giant breath in… and a long breath out. Another in… and out. Can you hear a horse neighing inside the barn? The horse sounds as content as you feel. Seconds pass, and you hear a long, slow, "Mooooooo," from a cow. Then, a mother pig oinks softly to her babies, reminding them to snuggle up to her for warmth. Isn't it fantastic to sit here, relaxed, with these friendly animals?

As you hear a chicken's soft *cluck,* you realize that this farm is a place to come when you need a reminder that you are supported. Here, the animals help you relax.

Who helps you at home? Who can you go to when you need help at school? Remember these friends who you are grateful for."

**Robot.** "Continue to breathe deeply as I guide you on this wonderful adventure.

As you step through the robot door, you watch with awe as your legs, body, and arms are transformed into mechanical, robot parts. How neat! You gaze around the room; it is filled with fantastic sights. Over in the corner, you see a pile of wires and gears that must have been used to create your new robot body. Along the wall, there is a giant computer screen, filled with diagrams and numbers. You take a seat in the big, comfy chair in front of the computer, settling in. Sit with your back straight and your robot feet flat on the floor. Your robot arms rest in your lap. Take three big breaths. In… and out. In… and out. In… and out. It seems as if your breath is powering your robot body! Know that your experience here, in the robot room, is special.

Now, shift your attention to the inside of your robot body. Do you feel the gears shifting? Is there tension in your strong robot muscles? You focus on your feet first, feeling the cool floor under your metal toes. Notice what that feels like. Send a big breath to your feet. Then, move your attention and your breath to your robot legs. Notice what it feels like in your calves, your knees, and your thighs. Is there pain? Is there a gear out of place? Notice that each sensation is temporary, not permanent. Take one last breath in here at your legs… and with your breath, shift your attention to your robot stomach. Do you notice any mechanical, whirring sounds? Does your robot stomach need food, or is it full of healthy nuts and bolts? Continue breathing as you move your attention to your arms and hands. Notice if your long, shiny fingers feel warm or cold as they touch one another. Breath into your arms, hands, and fingers.

Remember, your breath is providing your body with power. Shift your attention to your neck. Notice how your neck feels. Is it strong? Is it supporting you today? Take a big breath in… and a long breath out. Finally, shift your attention to your head. So many things happen in your head. There, you have thoughts, feelings, and sensations. Notice that no thought, feeling, or sensation lasts forever; everything comes and goes, even in robots! As you are breathing, does your head feel heavy? Are there any wires crossed?

Take a few more deep breaths, breathing into every part of your body. You are one relaxed robot. Even outside of the robot room, your breath helps your body feel less tense and more focused. Remember to come back to the robot room when you need space to breathe and recharge your body."

**Create Your Own.** Note that this meditation is a "fill in the blanks" meditation, in which the child and/or reader can fill in the empty spots in the meditation with whatever words they choose that fit the suggestion in parentheses. Specifically, this meditation was meant to "fill in the gaps," in that that child can choose to insert a special interest of theirs that may not be in the book.

"You take a giant step through the doorway and find yourself in [place]. Wow! You begin walking toward [an object]. Notice how the ground feels under your feet. Use your senses to think about what you notice around you. Take a deep breath in… and a long breath out… As you walk, you begin thinking about how lucky you are to be here and how lucky you are to have the life you do. What are you thankful for? Take a few deep breaths and think about all the things in your life that are meaningful to you.

Once you reach the [same object as above] you reach out your hand. What do you feel? Are your fingertips feeling warmth? Or coolness? You that what you are experiencing will come and go. Your eyes settle on the scenery before you. There is a [animal] ahead. You notice all the colors in its fur—do you see red? [Color]? Brown? It's so [adjective], unlike anything you have seen before. You take a moment, noticing how much you appreciate that you can witness so many [adjective] things in life.

In the distance, you hear [a make-believe sound]. You are prepared to follow the sound, excited to find out what else is here in this magical place. After a few minutes, you discover that the sound was a dragon! Luckily, this dragon is [adjective]. He invites you to breath big, fire-y breaths with him. Take a giant, dragon breath in… and breath out your fire breath as long as you can! Great job! You are grateful to get to experience this magical moment. Remember that you can come to this room when you need to take a moment and create your own magical moment. Take a few deep, dragon breaths, smiling with each inhale and exhale."

*Exit Meditation*

Below is the Exit meditation, which is meant to be read at the end of each use of the book.

"It's time for our mindfulness adventure to come to an end for now. Remember, that each room you have in your hallway holds a little bit of the calming information you have in your head--much of what you've learned can be found here!

When you feel sad or angry or like your energy is running too fast, you can come to your hallway, choose a room, and calm down. You can remember that you

have everything already stored in you to help you calm down. Just remember to magically open the right door and you'll remember so easily!

Shut the door to the [insert chosen room name] room now, knowing that you can access it at any time. Walk out into the sunshine! You can open your eyes and wiggle your fingers and toes! And you can come back to your hallway anytime to calm down!"

## Section IV: Utility in Practice and Future Directions

### Member Checking

The proposed intervention was presented at The ARC of Kentucky Conference in February 2020. The ARC is a national organization dedicated to serving individuals with intellectual and/or developmental disabilities and their families. The ARC of Kentucky Conference hosts a variety of attendees, from parents of children and adults with intellectual and/or developmental disabilities, to educators, occupational and mental health therapists, and self-advocates. One intent of this presentation was to receive critical feedback on the proposed intervention via member checking. Traditionally member checking is utilized in qualitative research in order to seek feedback from stakeholders addressing the validity of the research (Madill & Sullivan, 2018). Member checking provides the researchers with an opportunity to reflect upon stakeholders' opinions and feedback, allowing the researcher to improve upon their methodology/hypotheses in order to become truly representative of the stakeholders' wants and needs or to include stakeholder interpretations in the discussion and conclusions of their research. Although this project does not represent true qualitative research, member checking at The ARC of Kentucky Conference was sought out because it was hoped that stakeholders (e.g., parents, educators, and therapists) in attendance could provide valuable feedback regarding the utility, quality, and ease with which the proposed intervention could be used. After the proposed intervention was discussed in a short presentation, the stakeholders (i.e., audience) were asked to provide feedback. Audience members expressed that they believed the proposed intervention would be helpful to de-escalate students and clients as they are experiencing difficult to

manage emotions and behaviors. The audience was also in agreement that the incorporation of special interests into the mediations is helpful in allowing children on the Autism Spectrum take control of their own mindfulness experiences. As far as suggestions for improvement, the audience recommended recording meditations so a child, parent, educator, or whomever is utilizing the intervention can "activate" the meditations quickly in a stressful moment. When reading through a sample meditation with the audience (they chose the "Create Your Own" meditation), it was suggested that the blank spots be filled with specific items or ideas to be labeled underneath the blank. For example, a blank under which "animal" is printed is meant for the child to insert an animal. The blanks were not labeled prior to member checking. While reading through the sample meditation, it became clear that the reader would need to insert words into blanks in a more systematic way than originally designed.

## Case Study

What follows is a "case study" detailing several concepts related to specialized mindfulness for children with ASD. The case study will explain 1) how this project began and was piloted in a single case study; 2) the utilization of creative mindful techniques with one child client diagnosed with Autism Spectrum Disorder; and 3) the realization that clinical therapy can be more effective with children on the Autism Spectrum when incorporating their special interests into treatment. Please note that the child's name and other identifying information in the following case study were changed due to confidentiality concerns.

Tucker is an 11-year-old boy who has been diagnosed with Autism Spectrum Disorder and Attention Deficit Hyperactivity Disorder. He has been receiving

individual therapy since he was diagnosed with both disorders (at about 4 years old). When the author began seeing Tucker for individual therapy (at 10 years old), his therapy goals were to begin building coping strategies for working with changes in his routine. He worked with his previous therapist to create social scripts that he could use when he knew a change in routine was going to occur. One such script went as follows: "Change is part of life. Changes can be good, bad, or somewhere in between. I can handle change. If I am upset about a change I can talk about my feelings. It is okay to not like change, but I can handle change." Fortunately, this script helped Tucker through the transition from one therapist to another. However, outside of therapy, he was unable to cope with change. A change in his routine prompted escalation at home and at school in the form of yelling, crying, and expressing ideas such as, "I want to die," "I hope you go to jail," and "I will never calm down." Furthermore, when upset, Tucker repetitively flicked his ears, causing redness and irritation. In therapy, Tucker consistently escalated when an activity ended too soon or went too long, when an activity did not go his way, or when he and the current author had to stop a game in order to resume therapeutic activities.

In order to attempt to quell these emotional escalations, Tucker and the current author tried many different interventions, including cognitive behavior therapy, emotional regulation tools (e.g., The Alert Program, The Incredible 5-Point Scale), and social scripts, but Tucker would not attend to treatment. Instead, he frequently perseverated on one of his many special interests, including skunks, Thomas the Tank Engine, mice, and space. The author noticed that when time to speak about these topics was included in the visual schedule for therapy, Tucker worked cooperatively and

effortfully to reach these intervals. It was clear that spending time talking about his special interests was reinforcing for Tucker. During a session in which the author was trying desperately to instill effective coping strategies in Tucker, a brief guided imagery meditation was attempted. The meditation focused on a walk through the woods. Tucker did adhere to the meditation, but only for a short amount of time; after several minutes, he began interjecting bits of his special interests into the meditation (e.g., "And there was a mouse!" after the meditation mentioned a trail in the forest). Tucker's additions to the meditations provided that basis to this project—what if the meditations were actually about his special interests? Would he adhere even more? So, the author worked to incorporate a mouse throughout the meditation in the next therapy session. Surprisingly, Tucker sat through the whole meditation, breathing deeply and listening intently for more details on mice. After the guided meditation was over, Tucker asked for a meditation involving space, another of his special interests, to listen to during the next therapy session. The author could not find any space meditations on the internet, so an original meditation was created. This sequence—Tucker asking for a specific meditation, the author searching, not being able to find what he asked for, and then creating an original meditation—occurred several times. Thus, the "choose your own adventure" mindfulness practice was born. With each passing session, Tucker chose a new meditation for the author to write, typically centered on one of his interests. Tucker was excited about the meditations and used them as a coping strategy outside of therapy unprompted—this was a big accomplishment for him, as he often would ignore prompts to self-calm. Once mindfulness was incorporated into the therapy routine, Tucker came to therapy excited to hear his new meditation "story." Beginning therapy

with a meditation allowed Tucker to remain focused and calm throughout the session. When switching from one item to the next, Tucker no longer became upset, even if it was necessary to end a game to resume therapeutic activities. Further, as Tucker's mindfulness practice increased inside and outside of therapy, less and less harmful self-stimulatory behavior (e.g., flicking his ears) was observed.

Incorporating special interests into Tucker's treatment was extremely useful, however, simply incorporating special interests into treatment with individuals on the autism spectrum is hardly a novel idea. What is novel, however, is scripting that interest into a meditation, making mindfulness not only useful to a child with ASD, but exciting and motivating as well.

## Future Directions

As suggested by the member checking panel, one future direction of this project is to include recorded meditations within the product in some way. Meditations that can be played instead of read aloud would be beneficial for several reasons. This would allow children to engage in meditations of their choice without requiring a reader. This is helpful for children who have not yet learned to read or who struggle with reading. Recorded meditations also provide the child with additional opportunities to take charge of their own mindfulness experience and self-regulation skills, as they would be responsible for choosing the product and a meditation, and subsequently following through with the meditation.

Perhaps the most logical way to incorporate recorded meditations within the proposed intervention is creating a smartphone application to accompany the book and/or to serve as a standalone product if the book is unavailable to the application user.

Creating a smart phone application will further ensure that this intervention can be used across settings, especially on the go and in the moment of need. Interest by the general public in applications related to improving emotional states has increased drastically throughout the last decade, and this interest continues to grow (Bailon, Damas, Pomares, Sanabria, Perakakis, Goicoechea, & Banos, 2019).

Interestingly, there was a paucity of research regarding the efficacy of emotion regulation applications for use with children; even less was available regarding children on the Autism Spectrum. Despite the lack of research regarding effectiveness, literature suggests that in order to promote the most optimal results, smartphone applications meant to target aspects of health and mental health should rely upon evidence-based practices (Carey, Haviland, Tai, Vanags, & Mansell, 2016). A study focused on smartphone-delivered cognitive behavioral therapy demonstrated that children do comply with application-based interventions and find the applications easy to use. Importantly, parents indicated satisfaction with the application-based intervention (Pramana, Parmanto, Kendall, & Silk, 2014). Another study suggested that emotion regulation can be supported with application-based technology in adolescents with Autism Spectrum Disorder (Fage, Consel, Etchegoyhen, Amestoy, Bouvard, Mazon, & Sauzéon, 2018). Although limited, literature seems to suggest promising results for increasing emotion regulation using a smartphone application.

In order to ensure visual and ideological consistency between the smartphone application and the book version of the proposed intervention, the smartphone application will be created after the completion of the book. Several resources exist online to assist in the creation of a smartphone application, many of which require few

programming skills. Unless a prospective publisher of the proposed intervention requires that the smartphone application be associated with their name, and thus created through the publisher, the author will likely develop an application using a program that requires few programming skills. The author will peruse different application creation websites and programs, with the intent of discovering a program that is easy to use, modify, and disseminate. Once a program is chosen, the application will be designed. Ideally, the imagery within the application will mirror the imagery used the book; this includes the tabulated format, as well as the images of common special interests on each of the tabs. Similar to the book, an "About this App" and a "How to use this App" section will be included. The meditations in the application will be the same as the meditations within the book. Dissimilar from the book, however, the meditations will have a "Meditate Aloud" function. This function will allow the child to turn on a recorded version of the meditation for listening and/or reading along. The smartphone application will be designed with a child-friendly user interface. Once the smartphone application is fully designed and tested, the application will be released for download. Information about the application will likely be included in the book.

Another future direction of this project is to perform qualitative research with the proposed intervention in the form of social validity. Much like member checking, social validity aims to determine whether stakeholders find an intervention acceptable (Luiselli, 2017). In contrast to member checking, for which "stakeholders" referred to parents, educators, and therapists, social validity applies more to the children with whom the intervention is being utilized as the stakeholders. Specifically, social validity in this context will consist of parent and child ratings of the significance and

acceptability of the intervention, as well as the impact of the intervention on attention and/or emotional regulation. Ratings such as these will provide the author with information concerning the effectiveness of the intervention on improving attention and emotion regulation. Additionally, social validity ratings will assist in detecting flaws in the designed intervention and in gathering recommendations to enhance the intervention for its users. It is important to note that, although considered qualitative research, social validity is only meant to evaluate a specific intervention and does not provide any validation of an intervention (Carter, 2010).

As mentioned previously, social validity in the context of this project will consist of parent and child rating scales. Rating scales are one of the most frequently used methods for assessing social validity (Carter, 2010). The parent and child rating scales will be brief and mirror one another in content. The child scale will be written using easy to comprehend language and will include visual anchors (e.g., smiley face vs. frowny face) instead of numbered ratings. The questions will ask the parent and child to rate the ease with which the intervention is employed, the utility of the intervention, and the impact of the intervention on attention and/or emotion regulation. In order to promote consistency of results, these scales would be completed uniformly for each participant dyad: after a certain number of usages of the intervention and a designated amount of time (e.g., after one month of using the intervention once per day). Participant selection will depend upon institution and population available to the author at the time of the research. A sample social validity rating scale for both parent and child can be found in Appendix B at the end of this document.

## Implications

The purpose of this project was to create a unique contribution to clinical practice by proposing a "Choose Your Own Mindful Adventure" intervention for children diagnosed with Autism Spectrum Disorder. This intervention aimed to incorporate special interests in the form of "adventurous" mindfulness meditations, with the intention that the integration of special interests into mindfulness would promote adherence and practice for children learning attention and emotion regulation skills. Member checking, and the case study during which the proposed intervention was utilized, suggest that this intervention can be useful to its intended population. It is hopeful that future social validity results will suggest the same.

Special interests play a large role in the lives of individuals on the Autism Spectrum, as they are sources of intense engagement and enjoyment (Charlop-Christy & Haymes, 1996), and research suggests that utilizing special interests in psychological treatment of Autism-related symptoms is beneficial (Jung & Sainato, 2015; Kryzak & Jones, 2015). This begs the question: Why are special interests not incorporated into a greater number of psychological interventions? Interventions, such as the proposed intervention, incorporating special interests into a specific treatment goal are important, as they can create task adherence and enjoyment. Furthermore, using special interests in treatment may help the child feel more comfortable and heard. Clinicians working with individuals on the Autism Spectrum should be encouraged to employ special interests in treatment, and more research should be performed regarding the efficacy of psychological treatment of Autism Spectrum Disorder utilizing special interests within evidence-based practices.

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# APPENDICES

# Appendix A: Diagnostic Criteria

## Appendix A: Diagnostic Criteria

The DSM-III-R Diagnostic Criteria for Autistic Disorder are as follows (American Psychiatric Association, 1987):

At least 8 of the following 16 items are present, these to include at least 2 items from A, one from B, and once from C:

A. Qualitative impairment in reciprocal social interaction as manifested by the following:
    1. Marked lack of awareness of the existence of feelings of others
    2. No or abnormal seeking of comfort at times of distress
    3. No or impaired imitation
    4. No or abnormal social play
    5. Gross impairment in ability to make peer friendships
B. Qualitative impairment in verbal and nonverbal communication and in imaginative activity, as manifested by the following:
    1. No mode of communication, such as: communicative babbling, facial expression, gestures, mime, or spoken language
    2. Markedly abnormal nonverbal communication, as in the use of eye-to-eye gaze, facial expression, body posture, or gestures to initiate or modulate social interaction
    3. Absence of imaginative activity, such as play-acting of adult roles, fantasy characters, or animals; lack of interest in stories about imaginary events

4. Marked abnormalities in the production of speech, including volume, pitch, stress, rate, rhythm, and intonation
5. Marked abnormalities in the form or content of speech, including stereotyped and repetitive use of speech; idiosyncratic use of words or phrases; or frequent irrelevant remarks
6. Marked impairment in the ability to initiate or sustain conversation with others, despite adequate speech

C. Markedly restricted repertoire of activities and interests as manifested by the following:
    1. Stereotyped body movements
    2. Persistent preoccupation with parts of objects
    3. Marked distress over changes in trivial aspects of environment
    4. Unreasonable insistence on following routines in precise detail
    5. Markedly restricted range of interests and a preoccupation with one narrow interest

D. Onset during infancy or early childhood

The DSM-III-R Diagnostic Criteria for Pervasive Developmental Disorder, Not Otherwise Specified are as follows (American Psychiatric Association, 1987):

"This category should be used when there is severe and pervasive impairment in the development of reciprocal social interaction associated with impairment in either verbal or nonverbal communication skills or with the presence of stereotyped behavior, interests, and activities, but the criteria are not met for a specific Pervasive Developmental Disorder, Schizophrenia, Schizotypal Personality Disorder, or Avoidant

Personality Disorder. For example, this category includes “Atypical Autism”—presentations that do not meet the criteria for Autistic Disorder because of late age at onset, atypical symptomatology, or subthreshold symptomatology, or all of these.” The DSM-IV Diagnostic Criteria for Asperger’s Syndrome are as follows (American Psychiatric Association, 1994)

A. Qualitative impairment in social interaction, as manifested by at least two of the following:
    1. Marked impairment in the use of multiple nonverbal behaviors, such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
    2. Failure to develop peer relationships appropriate to developmental level
    3. Lack of spontaneous seeking to share enjoyment, interests, or achievements with other people
    4. Lack of social or emotional reciprocity
B. Restricted, repetitive, and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
    1. Encompassing preoccupation with one of more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
    2. Apparently inflexible adherence to specific, nonfunctional routines or rituals
    3. Stereotyped and repetitive motor mannerisms

4. Persistent preoccupation with parts of objects

C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

D. There is no clinically significant delay in language.

E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than social interaction), and curiosity about the environment in childhood.

F. Criteria are not met for another specific pervasive developmental disorder or schizophrenia.

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# Appendix B: Sample Social Validity Rating Scales

## Appendix B: Sample Social Validity Rating Scales

### Sample Parent Rating Scale

Directions: For each question, please circle the number that best describes your family's experience using the "Choose Your Own Mindful Adventure" intervention.

| **Question** | **1: Strongly Disagree** | **2: Disagree** | **3: Neither Agree nor Disagree** | **4: Agree** | **5: Strongly Agree** |
|---|---|---|---|---|---|
| The intervention is easy to use. | 1 | 2 | 3 | 4 | 5 |
| The intervention was formatted in a logical way. | 1 | 2 | 3 | 4 | 5 |
| I noticed a positive change in my child's behavior after a meditation. | 1 | 2 | 3 | 4 | 5 |
| By participating, my child learned important attention regulation skills. | 1 | 2 | 3 | 4 | 5 |
| By participating, my child learned important emotion regulation skills. | 1 | 2 | 3 | 4 | 5 |
| My child seemed to enjoy the included meditations. | 1 | 2 | 3 | 4 | 5 |
| My child enjoyed using the intervention. | 1 | 2 | 3 | 4 | 5 |
| My child requested use of the intervention (i.e., asked to read a meditation). | 1 | 2 | 3 | 4 | 5 |
| We will continue to use this intervention at home. | 1 | 2 | 3 | 4 | 5 |
| I would recommend this intervention to other parents. | 1 | 2 | 3 | 4 | 5 |

**Sample Child Rating Scale**

Directions: With the help of your parent, for each question please circle the face that best tells about how you felt while using the "Choose Your Own Mindful Adventure" book.

| **Question** |  **Strongly Disagree** |  **Disagree** |  **Neither Agree nor Disagree** |  **Agree** |  **Strongly Agree** |
|---|---|---|---|---|---|
| The book was easy to use. |  |  |  |  |  |
| I felt better after meditating. |  |  |  |  |  |
| I learned to calm myself by doing meditations. |  |  |  |  |  |
| I liked meditating. |  |  |  |  |  |
| I would like to continue using this book at home. |  |  |  |  |  |
| I would tell my friends to use this book. |  |  |  |  |  |

# Appendix C: Choose Your Own Mindful Adventure: A Mindfulness Journey for Children with Autism Spectrum Disorders

## Appendix C: Choose Your Own Adventure: A Mindfulness Journey for Children with Autism Spectrum Disorders

### *About this Book*

Have you ever felt very sad or frustrated or so excited that you had a hard time calming down? This book can help! This book uses different types of mindfulness meditation to help you cope with emotions and everyday life. Mindfulness has been shown to help decrease sadness, worries, and busy thoughts. By using mindfulness and going on fun adventures, you can learn to breathe better and pay attention to your body while calming down. Even when you are feeling happy and calm, you can use mindfulness to continue along that path.

***How to Use This Book***

Let's get started on our mindful adventure! Start with the introductory meditation on the "Introduction" tab. After listening (or reading) the introductory meditation, choose any meditation that you might be interested in. Then, flip to that page and start your adventure! For example, if you are feeling silly, choose the skunk tab to hear about a skunk carnival while calming your body. If you like dinosaurs and feel like you need to move, choose the dinosaur tab for fun yoga poses! After you choose your adventure tab, finish with the "Exit" tab to wrap up your mindfulness journey. Come back to your book anytime you need it!

***Introduction Meditation***

Let's go on a journey.

First, let's make sure you are breathing nice, deep breaths. Breathe in deeply… and now breathe out slowly. Let's do it again. Breathe in… and breathe out. Great job! Continue breathing deeply as you listen and imagine my words.

Pretend you are in a big, stone hallway, perhaps in a palace or a fort. Notice the feeling of the hard stone under your feet. Know that no matter what sensation you are feeling, it will come and go.

As you walk down the hallway, you notice that there are doors along the wall, each labeled with something magical. Walk slowly, knowing that there are grand adventures waiting for you beyond the doors.

Take a deep breath in… and let it out slowly.

Which room will you choose today?

***Space Station***

Continue to breathe normally now as I guide you on this marvelous adventure!

You enter the space station.

As you sit in the captain's chair, notice your body instantly relax. Allow your body to sink down into the chair further and further, as your muscles become soft and limp. It feels so comfortable.

Your body seems to relax more and more with each and every word you hear.

Imagine now a small sparkle somewhere deep in space. You see it outside the giant window along one side of the space station. The small sparkle begins to glow brighter now, and you see it reaching up and expanding out. You realize it's a star! Can you imagine the bright lights?

As the star becomes brighter, you are breathing deeply. Soon, the star bursts, and sends a gentle shower of fireworks through space. Aren't you lucky to be able to witness something so beautiful inside your space station?

As the fireworks sizzle and flare down, imagine all of your bad feelings sizzling out too. Can you hear the "sssttt" of them sizzling out?

Take a deep breath, like you're breathing in the remaining glow of the star. All the good feelings you have are expanding in your body, just like the star expanded in space!

***Skunks***

Continue to breathe normally now as I guide you on this wonderful adventure!

You walk through the door to find yourself outside in a magnificent forest. Notice the beautiful colors of the trees all around you, and the sounds the birds make as they chirp. Isn't it wonderful?

After taking a few steps along the path, you notice a strange smell accompanied by a strange noise. You follow the path further and slowly walk toward the sound. As you come to the path's end, you see a small animal den and the biggest skunk you've ever seen! He is making something… What could it be? You walk over, remaining as calm as you can. You notice Mr. Skunk has just made a bag of cotton candy, and over the hill you see a park, full of rides and other skunks just like Mr. Skunk!

As you watch Mr. Skunk walk away, you take a seat on the cool ground to enjoy the scene below. Feel the grass on your hands and the wind blowing across your face. Notice how your thoughts and feelings come and go, reminding yourself that frustrations are not permanent.

Listen as the carnival music fills the air and smell the kettle corn and candy apples!

Take a deep breath. Here, notice what it feels like to be calm and happy. The sound of the happy skunks below make you smile. Your mind is clear of frustration, and you know that when you feel upset you can visit the skunks here in the forest.

***Train***

Continue to breathe normally as I guide you through this great adventure!

You step through the big, stone door and onto soft green grass. Notice what the air feels like as a cool, crisp breeze blows across your body and through the trees all around you.

While the breeze blows, you notice a sound. At first, you think it's just the wind. A moment passes, and the noise stops and then starts again. What a curious breeze that would be. You decide to investigate. You walk through the tall trees, and into a clearing. You notice an old, wooden building a short distance away. You take in a long, deep breath… and blow out an even longer one!

You walk toward the old, wooden building. Notice the sun on your face and what the heat feels like on your skin. What sensations tell you that you're warm? A smile creeps across your face as you think of happy times that provide you with a different sort of warmth-- a warmth of your heart.

Finally, you reach the building. Inside, you hear that curious sound you heard just a short time ago, but this time, it's much louder! Around the corner, you notice a big, blue train. The train is blowing his horn and seems to have become stuck on the old track. He seems sad. You walk over, remembering the warmth that the sun brought to you, and pat the train. Feel the hard engine under your fingertips. Is the train's metal cool or warm? In time, you help the train become un-stuck. As you watch him roll away, you remember your warmth. You realize that this is a place you can come when you feel sad or upset to remember all the happy times you've had. Smile and breath.

***Airplane***

Continue to breathe normally as we fly through this adventure…

As you step into the room, you notice a cool breeze wash over your body. You close your eyes and breathe in slowly, like the wind is filling your body with air. Slowly, you blow out the air as if you are blowing up a big balloon.

Once you have finally released your big breath, you take a look around. The sun is warm on your skin. What sensations tell you that you are warm? You hear a low rumbling sound. You wonder what it is, but you listen for a while, letting your ears settle on the noise for a few deep breaths. Then, your eyes finally land on what is in front of you--It's a giant plane, almost ready to take off! Your senses are so happy you are taking the time to notice the moment.

You walk toward the plane ready to embark on an adventure. Notice how you feel in your mind right now? Are you excited? Nervous? Take a moment to feel and breathe.

Notice how you feel in your body right now. Are your hands shaking? Is your breathing fast or slow? Realize that no matter what sensation you are feeling it will come and go.

You board the plane. As you sit in the pilot's seat, you realize that this plane was specially made just for you. The seat feels snug and warm. You breathe in and out slowly as you reach forward and prepare for takeoff. You know exactly what to do. How wonderful is it that your plane is here for you when you need to calm down or escape something for a while? You remember that you can rid yourself of big or negative feelings by breathing and taking flight. Smile, and take off.

***Mouse***

Keep breathing deeply as I guide you on this adventure.

After walking through the doorway, you find yourself in a large, open room. It's breezy here, and you feel the cool air on your face. You begin walking around the room. It is round and brick. The sun shines through the windows; notice how it heats your skin. Along one wall of the room, you see a shiny mirror. It's strange, but in the reflection, you do not see yourself, but instead you see a tiny mouse. You look down and discover that you have furry hands and a big, curly tail! You must have turned into a mouse as you entered this room. How wonderful!

You sit down against the cool wall, with your new mouse legs stretched out. With your hands in your lap and your eyes closed, you take a big deep breath in… and then breathe out. Let's explore the way your muscles work in your new mouse body.

You squeeze your tiny mouse toes… and release them. Notice the way your toes feel tensed and relaxed. Do the same for other parts of your mouse body. Squeeze your mouse legs... and release them. Squeeze your mouse tummy… and release it. Squeeze your small mouse fists… and release them. You are doing a great job! Squeeze your mouse arms… and release them. Squeeze your mouse shoulders up toward your ears… and release them. Last, squeeze your little mouse face. Make sure to wiggle your nose! Release your mouse face muscles. Notice the way your body feels as it is completely relaxed. You know that this is what it feels like to be free of worries, and you remember that when you feel worried, you can make your body relax by remembering the magical time you became a mouse.

The mouse room is a place you can come whenever you feel tense, nervous, or worried. Becoming a mouse and relaxing your muscles helps you become less nervous or stressed. You take a deep breath and loosen all your muscles one last time.

***Superhero***

Make sure you are standing in front of a mirror for this one!

Take a big, deep breath in… and let it out slowly. You see yourself in the mirror. Imagine yourself as a superhero. What would you look like? Would you look the same? Would you look very different?

Place your hands on your hips, making triangles with your arms at the side of your body. Stand tall, with your feet wide apart. There, now you really look like a superhero! Imagine your superhero outfit. Your long cape flows majestically as you stand powerfully. Let the confidence flow through your body. Say to yourself, "I can do anything, I am a hero." Believe it, because it's true! Take a few deep, heroic breaths as Superhero You. Realize that you have been a superhero all along, and you will continue to be one as long as you repeat, "I can do anything, I am a hero.

***Dinosaur***

Make sure you have space to move around for this adventure!

As you step through the doorway, you notice that you are in a big, open field filled with dinosaurs. You must have traveled back in time! The dinosaurs seem to be very relaxed—they are all in the field stretching their normal dinosaur stretches. Let's try to be as relaxed as the dinosaurs.

First, let's see if we can be just like the brachiosaurus. Get down on your hands and knees. Make sure your hands are right under your shoulders and your knees are right under your hips. Now, take a deep breath and then dip your stomach down and stretch your long, brachiosaurus neck up to the sky. Great job! Now, do the opposite by arching your back to the sky and reaching your chin toward your chest. Take a deep breath in and dip your stomach again, stretch your neck, and breathe out a big dinosaur roar! Nice!

Now, let's stand straight up. Let's see if we can be a peaceful velociraptor. Take a deep breath in and lift your right leg up, hugging it into your chest. Balance takes practice! Step your right leg down and do the same with you left leg. Good!

Last, but not least, let's try to be like the triceratops. Stand up straight like a tree. Now, lift your arms way up in the sky, like they are two of the horns on a triceratops's head. Reach as high as you can, while breathing deeply. Lean your head back slightly, allowing your nose to become the third horn. Stay like this for a few deep breaths.

Isn't it so neat that we can go back in time just for a few minutes to practice our dinosaur stretching?

***Farm***

Continue to breathe normally as I guide you on this exciting adventure.

You step through the door, immediately hearing the crunch of crisp grass underneath your feet. You notice the sun high in the sky. Do you feel the warmth on your skin? Take a deep breath in… and a long breath out. You begin walking to take a look around this new, fantastic place. The path ahead of you looks well-worn with footprints… but these footprints do not look like yours! Animals must walk this path! You continue forward, and find yourself in a pasture, full of grazing sheep. They are fluffy and white, and they look so nice. You slowly walk through the field, calmly passing the sheep, careful not to disturb them. Once through the pasture, you come upon a big, red barn. Inside, you hear familiar animal sounds. Instead of walking inside, you decide to take a seat on the nice, soft grass. As you lean against the barn, you close your eyes and take a giant breath in… and a long breath out. Another in… and out. Can you hear a horse neighing inside the barn? The horse sounds as content as you feel. Seconds pass, and you hear a long, slow, "Mooooooo," from a cow. Then, a mother pig oinks softly to her babies, reminding them to snuggle up to her for warmth. Isn't it fantastic to sit here, relaxed, with these friendly animals?

As you hear a chicken's soft *cluck,* you realize that this farm is a place to come when you need a reminder that you are supported. Here, the animals help you relax. Who helps you at home? Who can you go to when you need help at school? Remember these friends who you are grateful for.

***Robot***

Continue to breathe deeply as I guide you on this wonderful adventure.

As you step through the robot door, you watch with awe as your legs, body, and arms are transformed into mechanical, robot parts. How neat! You gaze around the room; it is filled with fantastic sights. Over in the corner, you see a pile of wires and gears that must have been used to create your new robot body. Along the wall, there is a giant computer screen, filled with diagrams and numbers. You take a seat in the big, comfy chair in front of the computer, setting in. Sit with your back straight and your robot feet flat on the floor. Your robot arms rest in your lap. Take three big breaths. In… and out. In… and out. In… and out. It seems as if your breath is powering your robot body! Know that your experience here, in the robot room, is special.

Now, shift your attention to the inside of your robot body. Do you feel the gears shifting? Is there tension in your strong robot muscles? You focus on your feet first, feeling the cool floor under your metal toes. Notice what that feels like. Send a big breath to your feet. Then, move your attention and your breath to your robot legs. Notice what it feels like in your calves, your knees, and your thighs. Is there pain? Is there a gear out of place? Notice that each sensation is temporary, not permanent. Take one last breath in here at your legs… and with your breath, shift your attention to your robot stomach. Do you notice any mechanical, whirring sounds? Does your robot stomach need food, or is it full of healthy nuts and bolts? Continue breathing as you move your attention to your arms and hands. Notice if your long, shiny fingers feel warm or cold as they touch one another. Breath into your arms, hands, and fingers. Remember, your breath is providing your body with power. Shift your attention to your

neck. Notice how your neck feels. Is it strong? Is it supporting you today? Take a big breath in… and a long breath out. Finally, shift your attention to your head. So many things happen in your head. There, you have thoughts, feelings, and sensations. Notice that no thought, feeling, or sensation lasts forever; everything comes and goes, even in robots! As you are breathing, does your head feel heavy? Are there any wires crossed?

Take a few more deep breaths, breathing into every part of your body. You are one relaxed robot. Even outside of the robot room, your breath helps your body feel less tense and more focused. Remember to come back to the robot room when you need space to breathe and recharge your body.

***Create Your Own***

You take a giant step through the doorway and find yourself in [place]. Wow! You begin walking toward [an object]. Notice how the ground feels under your feet. Use your senses to think about what you notice around you. Take a deep breath in… and a long breath out… As you walk, you begin thinking about how lucky you are to be here and how lucky you are to have the life you do. What are you thankful for? Take a few deep breaths and think about all the things in your life that are meaningful to you.

Once you reach the [same object as above] you reach out your hand. What do you feel? Are your fingertips feeling warmth? Or coolness? You that what you are experiencing will come and go. Your eyes settle on the scenery before you. There is a [animal] ahead. You notice all the colors in its fur—do you see red? [Color]? Brown? It's so [adjective], unlike anything you have seen before. You take a moment, noticing how much you appreciate that you can witness so many [adjective] things in life.

In the distance, you hear [a make-believe sound]. You are prepared to follow the sound, excited to find out what else is here in this magical place. After a few minutes, you discover that the sound was a dragon! Luckily, this dragon is [adjective]. He invites you to breath big, fire-y breaths with him. Take a giant, dragon breath in… and breath out your fire breath as long as you can! Great job! You are grateful to get to experience this magical moment. Remember that you can come to this room when you need to take a moment and create your own magical moment. Take a few deep, dragon breaths, smiling with each inhale and exhale.

***Exit meditation***

It's time for our mindfulness adventure to come to an end for now. Remember, that each room you have in your hallway holds a little bit of the calming information you have in your head--much of what you've learned can be found here!

When you feel sad or angry or like your energy is running too fast, you can come to your hallway, choose a room, and calm down. You can remember that you have everything already stored in you to help you calm down. Just remember to magically open the right door and you'll remember so easily!

Shut the door to the [insert chosen room name] room now, knowing that you can access it at any time. Walk out into the sunshine! You can open your eyes and wiggle your fingers and toes! And you can come back to your hallway anytime to calm down!