

Hamline University

DigitalCommons@Hamline

School of Education and Leadership Student
Capstone Theses and Dissertations

School of Education and Leadership

Fall 2017

Moving And Learning: A Curriculum Designed To Reduce Stress In High School Physical Education Students

Anthony J. Bizal
Hamline University

Follow this and additional works at: https://digitalcommons.hamline.edu/hse_all



Part of the [Education Commons](#)

Recommended Citation

Bizal, Anthony J., "Moving And Learning: A Curriculum Designed To Reduce Stress In High School Physical Education Students" (2017). *School of Education and Leadership Student Capstone Theses and Dissertations*. 4393.

https://digitalcommons.hamline.edu/hse_all/4393

This Thesis is brought to you for free and open access by the School of Education and Leadership at DigitalCommons@Hamline. It has been accepted for inclusion in School of Education and Leadership Student Capstone Theses and Dissertations by an authorized administrator of DigitalCommons@Hamline. For more information, please contact digitalcommons@hamline.edu.

MOVING AND LEARNING: A CURRICULUM DESIGNED TO REDUCE STRESS
IN HIGH SCHOOL PHYSICAL EDUCATION STUDENTS

Anthony J. Bizal

A capstone submitted in partial fulfillment of the requirements for the degree of Masters
of Arts in Education
Hamline University

St. Paul, Minnesota

12/14/2017

Capstone Committee Members
William Lindquist
Megan Hendrix
Nolan Schlinsog

To my wife, thank you for your patience during this process, I would not be here today without your support. To Drake and Averi, Daddy can finally relax on the weekends.

“Using our mind and body to create peace”

ACKNOWLEDGEMENTS

Thank you to my advisory committee. To Bill, thank you for your constant patience throughout this process I would not have made it without your ability to lead me. To Megan and Nolan, thank you for supporting me in this process. I am glad I could have friends to lean on during this journey.

TABLE OF CONTENTS

CHAPTER ONE: Introduction	7
CHAPTER TWO: Literature review	15
Mindfulness	16
Yoga	21
Breathing	28
Conclusion	32
CHAPTER THREE: Methods	34
Setting	35
Participants	36
Curriculum Goals & Content	37
Development Theory	38
Data Collection	44
CHAPTER FOUR: Curriculum	46
Understanding by Design Document	46
CHAPTER FIVE: Conclusion	57
REFERENCES	65
APPENDIX A Moving and Learn Introduction Power Point	72
APPENDIX B Yoga Poses, Routines, & Rubric	76
APPENDIX C Breathing Activities and Rubrics	155
APPENDIX D Mindful Activities	164
APPENDIX E Stress PowerPoint	168
APPENDIX F Small Group Routine Assignment	177

APPENDIX G Individual Routine Assignment

CHAPTER 1

Introduction

As many as 20 million Americans have been practicing yoga since 2014 including professional athletes and celebrities. As yoga becomes more and more prevalent in western society (Yoga Journal, 2014), it is easy to see why the practice has become so popular. Yoga is free to all and is accessible anywhere, at any time. People have been practicing yoga, mindfulness, and breathing for more than 3000 years (Prado, Raso, Scharlach, Kasse, 2014). For a long time the West has thought of the Mind-body connection as mildly therapeutic or placebo. Many people in the west think that yoga, mindfulness, breathing are not proven methods to help people. People think of yoga as a hobby instead of medicine. For the purpose of this capstone I will be using the concepts of yoga, mindfulness, and breathing together as a concept called Moving and Learning. This capstone study will be looking at the development of a Moving and Learning curriculum. Moving and Learning is an integrated approach to wellness that uses yoga, mindfulness, and breathing in classrooms. In this curriculum design process I am going to explore Understanding by Design methods to create a Moving and Learning, yoga emphasized curriculum for physical education students.

In the upcoming sections of this chapter I am going to explain how I was introduced to yoga during my undergraduate program. It is important that the reader understands how Moving and Learning entered into my life and the effects it had on me during my transition from a collegiate student-athlete to a student with no athletic obligations to the university.

Then, I will explain how the stakeholders will be affected by the research question. I want the reader to know how schools, students, teachers, and administrators will be affected by Moving and Learning programs in their schools.

Finally, I will talk about elements of the curriculum design. I will explain how I will use the Understanding by Design process to create an original Moving and learning curriculum

Personal Narrative

My journey with yoga, mindfulness, and breathing began in 2006. It was my senior year at NDSU and I was beginning my final year as a collegiate football player. Because of the physical nature of football our coaches decided that we, the players, needed another form of active recovery instead of another running, swimming, or strength training session. So, instead of running striders or doing another pool workout, our coaches decided that our team should try yoga. The coaches found an instructor that was already working on campus as part of the wellness and activity program offered to the whole student body. At first, I was like any typical adolescent male full of machismo and I thought that yoga was a joke. As we began our first lesson I remember thinking about how hard this is and that I had to be tough and get through the entire workout without taking any breaks. As the team finished our first yoga workout as a group, we all looked around and looked at each other thinking “that was tough.”. All of us just flopped down on our backs and took a rest from our “recovery” workout. After that initial session we had a debriefing with our head coach and the yoga instructor. They both asked us question about the physical demands that yoga requires and how they related to football performance. Many players, including myself, spoke up about how it was challenging,

but exciting to have a new workout and that we were ready for more. As the weeks turned into months the team's yoga practice improved from a bunch of knuckleheads being disruptive and laughing at how we were struggling with something like yoga, to a group of young men dedicated to not only active recovery but the mind body connection. Instead of the players breathing really heavy and struggling to keep up, they were focusing on linking the movements with their breath. Many of the skills we were learning in yoga were transferring to the football field during games and practices. In football one of the most detrimental things that can happen to teams are personal fouls. Personal fouls are usually committed after the play is over when players can't stop fighting after the whistle. When this happens teams receive the largest yardage penalty and sometimes the players can be ejected from the contest. So, when these flare-ups after the whistle would happen we would rush over to our teammate, we would all practice taking deep breaths as a way to calm our minds and restore the professionalism required to participate in collegiate activities. Many times we kept ourselves out of trouble because of the mind and body connections we learned through yoga and our ability to transfer these skills to the football field. This continued for the rest of my senior season. It was to the point where we all knew when we needed breaths and we could joke about it to each other after games when we would watch film. We would comment on when we were taking breaths and when we should have, lots of jabs at the coaches when their mini meltdowns were caught on tape too. Sadly, I soon left the program. When I left the program I started practicing yoga at home and in studio on campus with the same instructor that was in charge of leading the football sessions. As I began to really focus on my personal practice I began to master the connection of breath and body. I was learning how to control my

breathing not only in yoga but in class, at work, and in social situations. Understanding how to breathe was something that I, like most people, thought came naturally. Anyone can breathe, can they not? But, to have focused control over my ability to mindfully breathe using specific techniques took more discipline than I originally thought. My instructor told me about diaphragmatic breathing and the difference between that and chest breathing. It was explained to me that the way people breathe affects the way their body can interpret signals to and from the brain and in turn we essentially “hack” our bodies into mental and physical states that we desire. Diaphragmatic breathing would send signals to my brain to relax and let the stress response fade away and chest breathing with increase the signals to the brain that some kind of stress is being endured.

Whichever physiological response you desired could be attained by mindfully controlling your breathing. I took this information and cross referenced it. I did not find much information right away, mostly because I didn't know how to conduct proper research, but I knew that the breathing was helping me calm down when I needed to. As I began to really link not just my yoga practice, but my life, to breathing I was ready for the next step.

Mindfulness burst onto my scene in a yoga session not led by my regular instructor but instead a substitute. The sub took the class through a body scan. A body scan brings hyper focused attention to specific parts your body, from head to toe, in an effort to recognize and release much of the tension that has built up, wherever it may be, and let it go. Mindfulness hit me like a truck. I enjoyed the feeling I was getting from participating in a yoga workouts, mindful breathing, and mindfulness to help relax my body and help with physical and mental recovery.

As the years have passed along I have kept close to me the principles of yoga, breathing, and mindfulness. I learned about the practicality of yoga, mindfulness, and breathing as exercises that can adapt to any place and anytime under most conditions. Yoga itself has, in the last 11 years, helped me stay fit and flexible. After pushing steel around for high school and college football, I had zero interest in spending a lot of time in the weight room. As a bigger fellow I did not want to waste time, energy, or risk an injury on much jogging. So, I kept up a yoga practice that was challenging, but also low in physical stress in order to keep my physical fitness where it needed to be from a standpoint of health and personal image. Mindful breathing has also stayed close to me.

As I began my career as a teacher I had to learn to control my stress in front of the students and administrators. Deep mindful breathing exercises took practice at first but now I know when I am beginning to feel stress. I notice my stomach knotting up, and I can control the way I react by using mindful deep diaphragmatic breathing. The place that I use my breathing to control my stress the most is in the car in traffic. Whenever I feel the road rage coming on, I take an inventory of my posture and breathing. When I am getting stressed I always take a deep breath and rest my head on the headrest. Both the deep breathing and my posture put my mind and body in a more peaceful state. Of course I could not even be aware of the stress without mindfulness skills. I regularly find myself checking in with how I am feeling and what image I am portraying to others. Because of mindfulness, I can keep my emotions in check and keep moving forward, free from stress.

Genesis of Design Idea

Now that the reader has some insight into my background with yoga, mindfulness, and breathing I will talk about how I decided to develop Moving and Learning curriculum. I have been teaching physical and health education for five years. In my journey as a new teacher I have found that many people expect classes to be a certain way. For example, many people think physical education is only about the mile run, strength training, and sports. I have been working with many students that have these expectations, even I had some similar expectations in the beginning of my career, and this helped my transition into teaching go more smoothly because we all knew what to expect. But, now that I am becoming an established teacher reaching tenure, I am ready to break out of the traditional modes of thinking in terms of physical education. I want to find new ways to help teach students about Moving and Learning.

Working at an alternative school, I deal with many students, with many types of stress. From medical diagnosis of attention hyperactivity deficit disorder, or emotional behavioral disorders, to homelessness, or abuse, I must find a way to reduce the perceived or real stress that my students experience. That is where yoga, mindfulness, and breathing have come into the picture. In the early days of my teaching career I was teaching yoga as a way to get kids active without straining themselves. Now, I want to see if the Moving and Learning techniques I use can be made into a specific curriculum that can be adapted to classes outside of the physical education and also work at decreasing the stress in students. This is where the stakeholders come in. It is in the best interest of the students, teachers, administrators, schools, district, and University to create a physical education curriculum that supports the use of yoga, mindfulness, and breathing to reduce the stress of students. If students spend less time dealing with stress, the more

time they have to enjoy their personal lives, work, and school. Because yoga, mindfulness, and breathing skills are simple to learn, cheap to acquire in a monetary sense, and easily accessible regardless of location, students and many other people can use their skills to reduce stress when they feel overwhelmed. Families, schools, and businesses could benefit from yoga, mindfulness, and breathing exercises as needed to relieve stress instead of paying for other services or financial obligations related to any stress relief efforts.

Conclusion

In this chapter I have discussed the research question: To what extent do Moving and Learning affect stress of physical education students? The question is searching to find answers for teachers who need more tools in their classrooms to help students see that moving while in the classroom can help learning. Also, I discussed my introduction to yoga, mindfulness, and breathing. Through collegiate activities and beyond I was exposed to new ways of thinking and moving through yoga, mindfulness, and breathing that have impacted my life. From learning how to step away from situations that cause stress to dealing with road rage and more I have given the reader a glimpse into my early interactions with yoga, mindfulness, and breathing. Then I went on to talk about how I developed my research question. As a new teacher who needed to find their identity, to a tenured professional who wants to create my own path, yoga, mindfulness, and breathing was an easy choice for a topic. The research question is something that I am familiar with, know it works, and I am ready to research. I want to provide evidence that the research topic has effect when being used. Then, I talked about how the teachers, schools, districts, and other entities could find yoga, mindfulness, and breathing using Moving and

Learning. If schools can use the data from this research question they may be able to reduce costs related to student disruptions because of Moving and Learning, the schools could make a wise move by investing in professional development related to Moving and Learning.

In the next chapter, I am going to be presenting my literature review. I will be looking at three main categories of Moving and Learning. First, I will review literature based on mindfulness. I will examine prior studies done related to schools who have used mindfulness as a way to reduce classroom stress. Then, I will look at yoga. Yoga was used in many studies as a way to help students deal with stress. Finally, I reviewed studies that showed us how breathing exercises have been studied in schools to reduce stress in students.

CHAPTER 2

Literature Review

Chapter two is broken down into three sections: mindfulness, yoga, and breathing. Much of the information the reader will need to know about mindfulness, yoga, and breathing, in terms of the research, is included in each section.

The mindfulness section begins by explaining to the reader what mindfulness is, then moving to talk about how mindfulness can change people mentally and physically. Then, the section goes on to talk about how schools are using mindfulness to impact student behavior, test scores, self-concept, anxiety, depression, etc. The section continues to talk about how mindfulness is helping to alleviate stress in students who are exposed to regular mindfulness sessions. Finally, the section explains how mindfulness is practical for all students in any setting.

The next section, yoga, gives the reader a quick history lesson about the origins of yoga. With the mixture of modern and traditional practices it is important that the reader is given context about how yoga is being viewed today in the literature review. The section continues with information about how yoga in urban schools is being used to help students with emotional behavioral disorders (EBD). The yoga section also talks about the learning specific benefits like increased self-awareness, increased focus, better use of class time. Also, information about yoga suggests that schools who use yoga can reduce incidents of violence. Finally, yoga as a way to improve physical health and skill.

The final section is about breathing and how breathing affects the body. The literature shows that the way human's breath can be directly linked to the amount of stress we are causing or avoiding. The messages the body sends to the brain can be

controlled by the way humans breathe and consequently the messages that are being relayed back to the body will either reduce or heighten stress in individuals.

Mindfulness

“The attitudes that share the foundation for mindfulness - non judging, patience, beginner's mind, trust, non-striving, acceptance, and letting go.” (Broderick, 2013, p. 4).

This declaration of mindfulness is essential for the readers to establish a frame of thinking when it comes to mindfulness. For the laymen the concept of mindfulness can be extremely diverse. It is essential to understand the context of mindfulness as it comes up further in the literature.

Mindfulness leads to cognitive changes of thought that help people understand that thoughts are just that, thoughts (Baer, 2003). Instead of believing our thoughts as truths, mindfulness practitioners are able begin to control their thoughts and how they perceive themselves and the world around them. Mindfulness training can offer depressed people a chance to notice the thoughts that bring about depression and redirect them with actions like breathing, walking and sounds of nature. Because of mindfulness people are able to recognize thoughts that cause disruption to an otherwise normal life, and redirect that energy to help them lead a happier existence.

Mindfulness based stress reduction (MBSR) is an eight week program aimed at supporting people with stress, anxiety, depression, chronic pain, and chronic medical conditions . "Between stimulus and response there's a space, in that space lies our power to choose our response, in our response lies our growth and our freedom" (Baum, 2010, para. 7). We habitually react to stimuli people can become trapped in the way they think and react. MBSR helps people become more aware of our normal

reactions and create a means to disrupt the cycle of negative thinking and take back control of our lives.

Research is growing about “Mindfulness skills and the ability for them to improve memory, organizational skills, reading and math scores, while giving kids the tools they need to handle toxic stress” (Kinder, 2017. para. 3). In a study done about adverse childhood experiences (ACES) Kinder explains how children exposed to ACES eg. poverty, abuse, violence alter the development in children. The ACES are rewiring the brain in children. When children are exposed to ACES their amygdala hijacks the prefrontal cortex and prevents children from learning, even from the most renowned instructors. The ability for children to learn and apply mindfulness helps reduce the effects of ACES.

In a recent study published in the Scientific American research show that the amygdala, the part of our brain responsible for the stress response commonly known as “fight or flight”, has the ability to undergo neuroplastic changes after exposure to the eight week MBSR course (Creswell, Gianaros & Taren, 2013). Magnetic resonance imaging (MRI) of 155 adults shows that the participants show less grey matter in the right amygdala, which will reduce the sense of stress in the individual. This evidence suggests that people with mindful habits can affect health outcomes.

To build a case for financial gain in regards to mindfulness Belfield, et al. (2015) explains that investment in mindfulness can yield an 11:1 return ratio. Schools strapped for cash can expect to save money by investing in the training of mindfulness skills to teachers. The teacher can then pass on mindfulness skills to students within the school day. The studies included in the literature discuss were conducted independently and

cannot be compared side by side. But, all the studies did show economic evidence that mindfulness skills can be worth the investment.

In the Baltimore Public School System 97 fourth and fifth grade students were selected to be a part of mindfulness intervention that consisted of 45 minute lessons, four days a week, for 12 weeks. The study gave the participants three self-report surveys that included involuntary stress response, depressive symptoms, positive and negative emotions, and relations with peers in school. Findings state that mindfulness interventions are likely to be accepted by students, teachers, and administrators. And, the authors find that mindfulness interventions “will likely reduce psychological and cognitive patterns of response to stress among youth.” (Mendelson, et al., 2010, p. 991).

Another study done this time in North Wales, United Kingdom shows the benefits of mindfulness in schools (Vickory & Dorjee, 2016). During normal school hours 71 children ranging in ages of 7-9 were included in the study that used several measures. The measures include Child Adolescent Mindfulness Measure, Emotional Expression Scale for Children, Sterling Children’s Well-Being Scale, The Positive and Negative Affect Scale for Children, and Behavior Rating Inventory of Executive Function - Parent and Teacher Versions. This study resulted in 76% student approval rating of the mindfulness intervention and improvements in emotional well-being at the three month follow up.

In a study conducted on pre-medical and medical students who were self-reporting high levels of stress, were subjected to an eight week meditation-based stress reduction intervention that was aimed at reducing the stress of the students (Shapiro, Schwartz & Bonner, 1998). The study explains that the students who willingly engaged

in the program can leave the program with skills that can help them be better students. Findings indicate that the interventions can effectively reduce anxiety and stress, and an increase in overall empathy and spiritual experiences. Scores on the empathy measure increased significantly from pre to post testing, which indicates that the intervention helped students improve their listening skills and developed more compassionate perspectives for themselves and their future patients.

Discussing mindfulness and mindlessness, King and Sawyer explain how mindful communication needs to be taught to students. The article explains that humans communicate for various reasons. Specifically the authors explain that humans use language to induce compliance, resist persuasion, seek affinity, and maintain relationships. “It is precisely the person's capacity to reason and adapt in response to situational constraints that explains why people should become mindful of their interpersonal decisions including the messages they construct for one another” (King & Sawyer, 1998, p. 327). Implications for future research and study of communication and pedagogy include the questions about the ability of humans to mindfully consider their communications strategies as successful or not.

With the objective to conceptualize and apply mindfulness to schools and to explore trust as it fosters mindful actions a study of 2,600 teachers from 75 schools was conducted (Hoy, Gage, & Tarter, 2006). The participants were given the School Mindfulness Scale (Hoy, Gage & Tarter, 2004) and the Omnibus Trust-Scale (Hoy & Tschannen-Moran, 2007). The purpose of the study was to help administrators and teachers recognize that thoughtful adaptability is the price we pay due to our standard practices, practices that are supposed to protect institutional functioning from individual

thoughts and feelings about how and why to teach the curriculum. The findings indicate that principals need to lead their schools in mindful ways by encouraging teachers to think creatively, take reasonable risks, and stay resilient, consequently, trust goes hand in hand with student success in schools. Principals who understand how to be mindful of the way they lead their staff will increase the learning in their students.

In an article written about school psychologists and their ability to practically use mindfulness techniques the authors describe the use of Mindfulness Based Stress Reduction (MBSR) as a tool for students to integrate in their everyday lives (Felver, Doerner, Jones, Kaye & Merrell, 2013, p. 541). The MBSR intervention lasts for eight weeks and included daily homework and group meetings to teach mindfulness techniques and discuss application. In a summary of 39 peer reviewed articles the effect sizes ranging from moderate to high leads the reader to the conclusion that MBSR training for school psychologists will lend itself a useful tool as universal interventions, targeted group interventions and intensive interventions for students. The effectiveness of the mindfulness interventions within a variety of populations and in many contexts lends itself as a favorable way for school psychologists to deliver services. “Mindfulness psychology offers an avenue of scientific inquiry that has promise for enhancing psychosocial well-being, decreasing stress, and providing support for those who need it most” (Felver et al., 2017, p. 541).

Mindfulness is a proven tool and many studies have been provided that show positive links in schools where mindfulness is practiced. The mental and emotional benefits of mindfulness include reduced stress, improved well-being, and developing compassion. There is also evidence shown to support neuroplasticity within subjects of

mindfulness studies (Baldini, Nelson, Parker & Siegel, 2014). Neuroplasticity is one of the most exciting benefits of mindfulness being discovered. Because humans can rewire their brains using mindfulness, those humans can expect the mental benefits previously mentioned. Schools stand to gain a lot in terms of fewer fights, financial gain, and improved academic performance by incorporating mindfulness skills during regular school hours. It is the aim of the research study to find trends within the mindfulness portion of Moving and Learning that schools can use to improve stress related outcomes.

Yoga

For the reader to begin to have an understanding of definition and history of yoga the citation here provides a full description of yoga.

Yoga, which requires individuals to practice self-control and be aware of their limits and potentials through the maintenance of their postures (asanas), could improve physical and emotional balance. Yoga, which originated in India, is a set of techniques that have existed for more than 3,000 years and has been a part of Indian medicine.

Orientalists believed that it affects nervous energy and the activities in the endocrine, cardiac, pulmonary, muscular, and nervous systems through stimulation and facilitates physical, emotional, and spiritual recovery. Yoga seeks to unify the mind and body through self-recognition and emotional and physical realizations of the asanas; its principal features of maintaining control and comfort

provide targets or patterns of implementation to help practitioners adopt a calmer and healthier lifestyle. (Prado, Raso, Scharlach, & Kasse, 2014, p. 133)

Hatha yoga is mind and body practice where practitioners determine the pace of their journey. Yoga has practitioners maintain postures while focusing on breathing, comfort, and stability with the goal of self-awareness and body control. Techniques involved in yoga are known to evoke “physiological response such as emotional balance and body harmony, in motion; they also enhance strength and flexibility, which are factors that induce important influence in the activities of daily living” (Prado, et al., 2014, p.134).

Yoga in schools is becoming more commonplace. As Lisa Ann Williamson points out , yoga has “learning-specific benefits like fewer fights and arguments amongst students, better student decision making, increased self-awareness and self-esteem, improved concentration and retention, and more efficient use of class time” (Williamson, 2013, p. 36). The program of K-8 Yoga in Milwaukee explains that in 2012 a program was piloted to 350 K-8 students. The intervention included yoga and mindfulness while modeling respectful and calm behaviors. Immediately students started becoming more aware of the volume of their voices and the tones their words carried. The team measured disruptive incidences per the United States Department of Education Positive Behavioral Interventions and Supports. The year before the yoga intervention the school observed 255 classroom disruptions, 320 disorderly conducts, and 150 fights. After the one year study the team saw those metrics drop by more than half to 110 classroom disruptions, 40 disorderly conducts, and 52 fights (Williamson, 2013, p. 37).

Forty-eight peer reviewed studies were included in a systematic review of randomized control trials of yoga-based interventions (Ferreira-Vorkapic, et al., 2015). The studies were aimed at finding out whether or not yoga in schools had an impact on psychological well-being and cognitive functions. All of the studies included were “randomized control studies in which yoga was taught and the effects of psychological well-being or cognitive functions were analyzed” (Ferreira-Vorkapic, et al., 2015, p. 14). The analysis for well-being showed that an effect size was found for mood state measures, cognitive functions measures, and stress and anxiety measures demonstrated as better scores on the measure in post intervention results. The students, adolescents from all over the countries that comprise the United Nations, were shown to be in improved mental states after the yoga interventions.

A pilot-study done in a public primary school in Massachusetts was done to find a decrease in cortisol levels in students who participated in the yoga intervention (Butzer, et al., 2014). The “Yoga 4 Classroom” model was used in second and third grade classrooms. The purpose of the study was to determine if the researchers could find a change in salivary cortisol levels, checked at the beginning, middle, and end of the trial, as related to the yoga intervention. The study lasted for 10 weeks with one intervention per week that lasted for 30 minutes. The researchers found that at the end of the trial period the cortisol levels had decreased from baseline measure through the end of the 10 week period. The importance of a cortisol measure is that cortisol levels increase during times of stress, therefore students under more or less stress will have more or less cortisol in their sample respectively. The lower the cortisol levels, the lower the stress, and vice-versa. Cortisol testing is important for research because it gives researches reliable

quantitative data related to bio indicators. Researchers can see how the body is being affected by any eustress or distress situation, not just yoga. The article also mentions how the teachers reported that students showed more creativity, more anger control, and an improved ability to control their behavior after the interventions.

A study was done to analyze motor, physical and behavioral parameters that included 16 first grade children in Brazil that consisted of a twelve week yoga intervention (Folleto, Pereira, Valentini, 2016). The interventions were given twice a week and lasted for 45 minutes. The study measured the students' ability in balance, running speed and agility, strength and flexibility, and perceived competence. When the data was compared from pre to post intervention the study found that there are positive changes in each of the categories except perceived competence. The results of the study adds to a growing body of evidence that supports yoga as an educational tool that has long lasting effects on the development of children.

A study done with the goal to evaluate the mental health benefits of yoga in schools adds to the body of research being done around yoga (Khalsa, Hickey-Shultz, Cohen, Steiner, Cope, 2011). The study included seven 11th grade and 12th grade classes that were comprised of 121 student's ages 15 - 19 years of age from a rural school in Massachusetts. The students were divided into yoga class and traditional physical education class. The eleven week program included sessions that lasted from 23 to 32 minutes in length two to three times a week. The students were given three self-report scales that measured personality, mood, and fatigue, were administered in a pre and post fashion. The study showed a positive change for the yoga group in the resilience measure and a dramatic decline in non-yoga group in the same measure. The study also shows that

students engaged with the yoga group showed positive changes in their ability to control their mood as anger and the control group showed declines in their ability to control their anger mood. The biggest change comes from the fatigue measure. The yoga group self-reported that fatigue dramatically dropped between the pre and post measure. Conversely, the control group displayed an increase of fatigue during the study. The study demonstrated that yoga in schools has the ability to be included as a viable option for school physical education classes to implement as a semester long course. The high attendance rates for the yoga group, along with the generally positive qualitative feedback was perceived that yoga was accepted by the students.

To determine the feasibility of yoga programs in urban schools with students that exhibit emotional behavioral disorders (EBD), the authors of this study to determine whether or not yoga can work to mitigate the issues being dealt with in schools associated to the urban populations and EBD's (Steiner, Sidhu, Pop, Frenette, Perrin, 2013). The participants in this study were 37 fourth and fifth graders aged eight to eleven who were identified by the school's special education director and teachers as having emotional behavioral disorders identified as anxiety, anger, depression, conduct disorder, hyperactivity, and attention disorders. The yoga interventions took place twice a week for three and a half months for 45 minutes for two years. The researchers found that there was improvement for the students with EBD in the areas of attention, adaptive skills, reduced depression, behavioral symptoms, and internalizing symptoms. The authors note that buy in from the school was very high and they also noted that removing students from classes to participate was challenging at time. The feasibility of a yoga program in the school was questionable considering the difficulties associated with EBD students.

Yoga in small groups, 7 - 10 students, will be a good adjunctive and innovative way to support EBD students. The authors conclude that yoga taught in small groups with a trained yoga professional is the optimal way to implement yoga in similar schools with similar populations.

The next article looks at a study that examines yoga as a way to mitigate the decrease of grades in high school students (Butzer, Von Over, Noggle Taylor, Khalsa, 2015). Three out of six physical education classes at a public high school in Massachusetts were selected to participate in yoga interventions two to three times a week for twelve weeks. The yoga instruction was developed to promote engagement and compliance in students while mitigating injuries related to the activity. The yoga activities included centering and breathing exercises, a warm-up comprised of basic yoga positions, yoga postures (asanas), and supine relaxation techniques of body scanning and breathing. The study findings suggest that students enrolled in the yoga program may have had a preventative effect by reducing the likelihood of declines in grade point average overtime versus the control group. Specifically, the control group showed steeper declines in grade point average during the time of the study. And, qualitative interviews from the a subset of yoga students suggested that they had less academic stress and better attitudes towards school in general.

A pilot study was done to investigate the effects of yoga training as compared to traditional physical skill training as a way to impact physical self-perception and problem related behavior in junior primary students. Twenty four primary students aged six through eleven that attended a Catholic school in Muenster, Germany were included in the eight week study. The study measures included; the Flanker Test which measures

inhibition, a core component of executive function, the Physical Self Concept Questionnaire for Children which measures the child's belief concerning their motor skills and capacities, an Anxiety questionnaire that looks at yoga's ability to reduce anxiety in the participants, and the Movement-ABC 2 that measures hand skills, balls skills and balance. The only significant conclusion that the study came to was that students in yoga ended up being slower in the speed measure than students in traditional physical education classes. The author thinks it is very important to point out that yoga focuses students on less hectic or vigorous effort movements. The less vigorous movements related to yoga should be expected when measuring explosive skills like speed. All other variables had no effect change from pre to post (Richter, Tietjens, Ziereis, Querfurth, Jansen, 2016)

In an attempt to explore yoga and emotional regulation in high school students a study was done (Daly, Haden, Hagins, Papouchis, Ramirez, 2015) with 38 students from New York public high schools in a 16 week yoga intervention that met three times per week for 40 minutes. Each yoga session included breathing, relaxation, and meditation techniques in a supportive non-competitive environment. The control group was a traditional physical education class that consisted of team sports, individual fitness and other socially focused activities. The study measured Emotional Regulation Index for Children and Adolescents (ERICA). ERICA is a self-reporting measure. Also, the Emotional Regulation Checklist (ERC) which is to be completed by the parent and teacher independently. The study shows us that, according to the ERICA measure, that yoga has a significant effect on students ability to regulate their emotions and that students in the control physical education group showed decreases in their emotional

regulation as the time period drew to an end. The authors suggest that this difference in emotional regulation as evidence to the regulating benefits of yoga.

In this section we have looked at several studies that have examined yoga. The studies included in this section tell the reader a lot about the usefulness of yoga. We were able to see that yoga used in urban setting schools helped reduce fights and helped students also have better decision making skills. Yoga used in one study helped students improve their self-esteem. One of the most important studies viewed in this section was the systematic review done to see if yoga improved the mental state of the practitioners, and it did. Yoga was also shown to help students improve their ability to control emotions. Studies have also been done linking the stress hormone cortisol to yoga. It is important to know that scientists have the ability to test and determine the amount of cortisol in the human body because we can judge the level of stress a person is feeling by the levels of cortisol in the body. While much of this information tells the reader the benefits of yoga the important information used in the study will be related to how yoga is implemented in combination with the Moving and Learning program.

Breathing

Breathing with a purpose is more involved than simple involuntary breathing. There are many techniques that people can use to control their breathing with different goals in mind. An article authored about breathing techniques the readers get an understanding of how to be conscious of their breathing (Wilkinson, Buboltz, Seeman, 2001). The first technique listed is the Slowing Down Breathing Rate technique. This style of breathing has the practitioner take a slow deep breath in through their nose for a six count. Then, an exhale out of the mouth that lasts for six seconds. The goal of this

exercise is to get the amount of breaths per minute down to 10 to 12 breaths per minute. This technique may be the easiest and most effective way to prepare for mental activities. The next technique is nostril breathing. People can control the prana (energy) coming in and going out of their body by using nostril breathing techniques. The practitioner simply breathes through the left nostril for calming prana or breathes through the right nostril for energizing prana. The practitioner will use either their pinky or thumb to close the nostril supplying the prana they do not want and breathing through the open nostril to get the prana they desire. Practitioners can alternate the pranas by breathing in through one nostril and out the other, in an alternating fashion, to achieve prana balance between energy and calm. The types of breathing explained here will be used during the breathing component of this study.

A review article written about the rhythm of breathing and how it is related to emotional control gives insight into how a person's ability to control their breathing has effect on the emotions they are experiencing (Homma, Masaoka, 2008). The article discusses that when humans are in a highly alert or stressed state that their breathing becomes shallow and chest wall movement increases. This is of course part of human evolution and the stress response. When humans are stressed they begin breathing faster in order gain access to more oxygen because it is time to flee or fight. The muscles need extra oxygen to accomplish either of these reactions. As a human continues to breath quick and shallow the brain is receiving signals of stress, whether the stress is perceived or real, and the stress response is relayed.

In the book “Yoga Calm for Children: Educating the Heart, Mind, Body” (Burdick, 2014) the authors write about how breathing affects our autonomic nervous

system. When humans are breathing fast and shallow, chest breathing, they are sending messages to the brain that the stress response is necessary at this time so the body goes into stress mode and the breathing quickens, the pupils dilate, and the muscles tense in preparation for stress because of the signals the brain is receiving from the breathing style. To counteract the stress response a person can use diaphragmatic breathing to send messages to the brain that there is no threat and the stress response can be quelled. Deep diaphragmatic breathing sends the messages to the brain that there is no reason to be in a state of stress. Just as the shallow chest breathing tells the brain that stress is present, diaphragmatic breathing tells the brain there is no need for alarm. The best benefits come over time. Due to neuroplasticity, the brain can be trained. When people regularly practice diaphragmatic breathing the healthy pathway to the brain gets stronger and the ability for diaphragmatic breathing to reduce stress is increased.

The benefits of meditative breathing are identifiable. Time Magazine released a special issue that was completely dedicated to mindfulness. The benefits of mindful breathing are listed (Dunn, 2017, p. 47). Boosts in serotonin, dopamine and endorphins occurs during mindful breathing. Blood pressure is shown to be reduced by 5 mm Hg in persons who participated in 20 minute mindful breathing sessions twice a day. Also mentioned is the ability to aid our digestive system. When the body is stressed the flee or fight reaction shuts down the digestive system in order to get blood to where it needs for action. When the body is relaxed through mindful breathing, the body restarts the parasympathetic nervous system, and the body is more readily able to digest. Reduction of inflammation is also a positive side effect. When a person practices mindful breathing they can reduce stress induced inflammation like arthritis and asthma. One last benefit

from mindful breathing is pain reduction. As much as 40% pain reduction has been reported in individuals practicing mindful breathing.

A study of students' perceptions of using deep breathing meditation techniques to reduce test anxiety was run at Southern Illinois University School of Medicine (Paul, Elam & Verhulst, 2007). The study was comprised of two groups of students who were enrolled in the MEDPREP program. The MEDPREP program required students to have already passed the MCAT. Both groups consisted of 32 individuals and lasted for 10 months each. There was no control group due to concurrent enrollment of summer courses. Because there was no control group the study was done as a descriptive study of MEDPREP students and perception of the presence or absence of stress when using deep breathing meditation. The deep breathing meditation interventions are described as "several minutes of quiet time to focus on breathing as a stress management strategy" (p.288). The findings of the study suggest that it is beneficial to allow students regular opportunity to practice deep breathing meditation as way to manage physiological and psychological stress related to academics.

This section of the literature review revealed many benefits to people who are subject to mindful breathing techniques. Breathing can be done intentionally to yield specific health benefits such as increases serotonin, dopamine, and endorphins as well as a reduction in the stress hormone cortisol. Understanding the difference between chest and belly breathing is the first step towards healing. When people are able to be mindful of their type of breathing we see that they are able to control the messages being sent throughout the autonomic nervous system leaving them feeling less stressed. Breathing was also shown to help students in high stress environments reduce the amount of stress

they are perceiving. For the purpose of this study the participants will be subject to the mindful breathing practices discussed in this section.

Conclusion

In this literature review the reader was given insight into the possibilities presented to schools and staff as way to improve school climate and educational outcome.

Mindfulness was presented as a way for students and staff of schools to become more connected with the present. When people are connected to the present they can understand what emotions they are feeling and why. Mindfulness does take time to learn but, according to the literature, the benefits will be worth the wait in the form of improved student behavior, mitigating grade decreases, and as stress, anxiety, or depression relief.

The second section, yoga, gave the reader historical background and context for yoga as it will relate to the study. Yoga was shown to improve student self-awareness, can be as a tool for reducing anxiety, a way to improve physical performance, and emotional regulation. The evidence presented in this section was chosen to establish a cause for using yoga as a tool for the research question.

The breathing section offers the reader insight into how breathing affects the body and mind. The reader learned about the effects of diaphragmatic breathing and chest wall breathing. Diaphragmatic breathing sends signals to the brain that it is time to reduce the stress response being relayed from the brain to the rest of the body. Chest wall breathing does the opposite. In increase in stress and anxiety can be expected from chest wall breathing. The literature review also provided the reader with examples of how students

from primary school to doctoral school have used diaphragmatic breathing practices to improve their academic outcomes and behaviors.

The next chapter in the capstone will be the methods sections. This section will discuss the mindful, yoga, and breathing techniques being used in the study. Also being discussed will be the tools being used to identify any changes that may have occurred due to the mindfulness, yoga, and breathing interventions.

Chapter 3

Methods

Introduction

This chapter is going to inform the reader of the methods that will be used to develop the moving and learning curriculum. Because of the subjectivity of yoga and mindfulness it is important to establish methods in my curricular design process. The reliability and validity of methods chosen during the curriculum design will ensure that this curriculum falls in line with the greater body of curriculum design.

We wake up and move about their days. Using their bodies to accomplish physical activities that are required of everyday living. Too often people mindlessly use their bodies to get “it” done. But, how often do we stop and think about *how* our bodies get “it” done? Yoga is the ancient tradition of linking the mind to the bod. Schools need to teach tools that help students better harness the ability to connect their mental world with their physical. Learning how to interpret the feedback our body gives us helps people understand how mental and physical pressure is affecting our mental and physical state. People are in desperate need of more training regarding the messages that our bodies are sending and receiving. Some people can tell when the weather is going to change because of the pain in their joints. But what does the pain in the stomach mean? Is there a gastrointestinal problem or are they experiencing anxiety? Messages like these need to be focused on and interpreted. This curriculum is aimed at bringing more awareness to the connections of the body and mind.

The need to develop a mindful yoga curriculum for physical education classes is evident. The studies have shown that the benefits to yoga, breathing, and mindfulness

exercises provide subjects with mental and physical benefits. People took the time to put together programs, run the study, and check the results as part of a study. The results are in and there is a demand for curriculum that teaches students the techniques of yoga, breathing, and mindfulness because so much of yoga already matches up with physical education curriculum standards (Falleto et al., 2016, Tummers, 2005, Vertinsky, 2014). What does this look like? How do we tell if the curriculum sustains lifelong change? Where does yoga fit into the popular culture? How and where do I do this? And the big one, Does this even work? In this chapter I am going to explain how I will develop a Moving and Learning curriculum. I will begin by describing the participants and the setting of the educational unit. Then I will explain the curriculum goals and content with methods used to design the unit itself. Lastly I will explain how I will develop each of the learning experiences for the students.

Setting

The school where the curriculum will be intended to be used at is a small alternative school in a Midwestern suburb . The school hosts 300 students when it is at full capacity. There are 22 teachers, three administrative staff, three office staff, and one custodian. The building is small but is adequately equipped for the needs of the curriculum.

Using the physical education lab, students who are enrolled in physical education will be the primary subjects of the curriculum. But, because of the nature of the school, many students from outside the class will join the physical education class as part of a myriad of interventions proposed by the building administration and support staff. Class periods at the school are one hour in length with two minute passing times. All physical

education classes in the school allow 10 minutes at the beginning of the class for students to change clothes, use the restroom, etc. and the school also allows five minutes at the end of the class periods for students to revert back into school appropriate attire. The water fountain is not located in physical education lab. Students will be encouraged to bring water and to also use the bathroom before class to reduce interruptions during the sensitive nature of content of the lesson.

The indoor space that is be used is a tile-surfaced area of 600 square feet of usable space. Students, in classes of 10 - 25, will have ample room to find a safe and comfortable space for the Moving and Learning lessons. The area that a single student will have plenty of extra room for larger class sizes and other participants.

An exterior door inside the classroom leads to the outside space which is enormous. Beyond the sporting infrastructure there is lush green grass on the fields. The fields offer a wide open space for students to soak in the sunshine and be grounded in nature. And the enormous cottonwood and oak trees scattered around the area are a beautiful addition to the space. There is a stream that runs along the edge of the property to the east that makes a wonderful ambient water sound to be heard when in close proximity. The school sits on a trail that when taken can lead students to parks, a man made dam, and other recreational areas that are good for Moving and Learning.

Participants

Because of the nature of alternative schools our students enroll with us for many reasons. Some students have been expelled from other schools, some students are court ordered to attend classes with us, and some students just want to be at an alternative school. Because of situational constraints previously mentioned, many students come

from far beyond the school community either by school provided transportation or by other personal means. Needless to say, the school struggles with creating opportunities when community driven programs are concerned.

Students who are in 10th - 12th grade that need credit recovery programs like the one the school offers typically enroll at the site. After 12th grade students who are still needing to meet all the requirements go to our sister campus for adult basic education until completion of high school requirements. Both female and male participants (Find #'s) who are in the age range of 14-18 years of age attend the school. District demographics include: English language learners (0.6%), special education students (12.8%), free and reduced priced lunches (53.0%), and homeless (12.2%). Ethnicities were comprised of American Indian/Alaskan Native (4.3%), Asian/Pacific Islander (2.4%), Hispanic, (6.7%), Black, not of Hispanic origin (18.9%), White, not of Hispanic origin (67.7%) (Viewpoint Data, 2017).

Many of the students at the school deal with social emotional issues. The development of a Moving and Learning curriculum is receiving full cooperation from administration.

Curriculum Goals and Content

The purpose of yoga is to bring together the mind and body and the goals of this curriculum design are on par with that definition.

1. Perform yoga postures
2. Perform mindful breathing techniques
3. Explain personal connections between the mind and body and how they relate to everyday life.

4. Provide rationale for a personal Moving and Learning routine

Students will take part in physical, mental, and academic learning experiences during the 3 week unit.

Development Theory: Understanding by Design

Everyday humans wake up and move about their days. Using their bodies to accomplish physical activities that are required of everyday living. Too often people mindlessly use their bodies to get “it” done. But, how often do we stop and think about *how* our bodies get “it” done? Yoga is the ancient tradition of linking the mind to the body and there is need for more curriculum development related to yoga in physical education programs. In my professional opinion schools need to teach tools that help students better harness the ability to connect their mental world with their physical. Learning how to interpret the feedback our body gives us helps people understand how mental and physical pressure is affecting our mental and physical state. It seems to me that people are in desperate need of more training regarding the messages that our bodies are sending and receiving. Some people can tell when the weather is going to change because of the pain in their joints. But what does the pain the stomach mean? Is there a gastrointestinal problem or are they experiencing anxiety. Messages like these need to be focused on and interpreted and this curriculum is aimed at bring more awareness to the connections of the body and mind.

Understanding by Design (Wiggins & McTighe, 2005) is the method that will guide me through the design of this curriculum. When I was first introduced to Understanding by Design I knew that I was in the right place. The concept about backwards design seemed very obvious to me that this is how curriculum should be

designed. Putting the objectives before the lesson plan seemed so obvious at that point. Plus, as a visual person, the standard UbD document was a natural fit. The three step process was keeping it simple which is good for the type of learner that I am.

Backwards design can be simplified by three stages. The first stage asks the curriculum designer to establish understandings and essential questions (Wiggins & McTighe, 2005). It will always be crucial for curriculum designers to review the understandings and essential questions as they develop stages two and three.

Before I can go any farther I have to discuss what understanding means. Understanding can be described as “being able to perform in a variety of thought-demanding ways with the topic - to explain, muster evidence, find examples, generalize, apply concepts, analogize, represent in a new way, etc.” (Perkins, 1994, p. 21). It is important to differentiate knowledge from understanding. People can know something without understanding it. I know how hot the sun is but I don’t understand why it’s that hot. Understanding is crucial for authentic assessment because teachers need to make sure that they are meeting all of the levels of the depth of knowledge (Webb, 2006).

Next I need to cover the importance of essential questions. Essential questions have six characteristics as outlined by (Wiggins & McTighe, 2005): thought provoking or intellectually engaging, higher order thinking, important or transferable ideas, raises additional questions, requires support or justification, and repeats. Essential questions need to be developed thoughtfully when developing curriculum because they need to make sure the students will understand the big picture when they are asked to give an answer to the essential questions. I will use the seven principles when developing the

essential questions for the curriculum. I want to make sure that the essential questions “matter to them now and in the future” (Wilhelm, 2012, p.25).

To reiterate where we are in the Understanding by Design process I am in stage one. I have explained that the purpose of the Understanding by Design ensures that every detail of the assessments and lessons comes back to the intended understandings and the essential question. Stage two will be designing assessment.

Assessment is the critical task that teachers must perform to determine if their students have reached the desired understandings. Properly aligning the assessment with the understandings and the thoughts that will be provoked by the essential questions is fundamental to this stage. This stage is where the connections are made between the instruction and the desired understandings and provides the evidence needed to determine if the curriculum is working.

The first step in creating assessment that aligns with the desired understandings and essential questions is determining what performances will be needed to determine if the defining characteristic of the curriculum are known to the student (Wiggins & McTighe, 2005). What does evidence look like? For physical education it looks like a lot of things. Most people associate physical education with the physical actions and much of this is true but ask any sporting coach and they will tell you that all the physical skill in the world will only go so far if there is no understanding for when and how to apply skills. The same will go for this unit. The nature of Moving and Learning begs students to ask questions and seek the deeper understandings behind the physical activities. The nature of why and how the skills in this unit work for people will help both the teacher and students while working toward understanding of Moving and Learning.

The second step in creating authentic assessment when using backwards design is determining what specific performances should be examined to determine if the desired results were achieved (Wiggins & McTighe, 2005). I will be using rubrics to assess the yoga, breathing and mindfulness skills. Rubrics are made of two important aspects (Brookhart, 2013). The first aspect is that curriculum designer makes the criteria clear and appropriate for the learner. The rubrics that will be created for the yoga and breathing will use visual evidence of the students' ability to perform the physical skills. I will be able to see how capable the students are at performing the yoga and breathing and because of the specific design of the rubric I will be able to provide the students with feedback based off the continuum of proficiency and the evidence required to assess mindfulness, journaling, will be assessed with writing rubrics for content. Which brings us to the second aspect of rubric design, clear description of the continuum of the quality of the skills required. Because students are developing the skills as they learn them, the students will be at different proficiency levels and thus the need for the continuum of skill quality. The important aspect of rubrics is that if they are well created they offer students specific feedback for different aspects of the skills being learned. Instead of telling a student they got an 80%, rubrics tell students what their exact strengths and weakness are.

Stage three is the lesson planning stage. This is where the curriculum designers determine what the students will need to be presented in order to gain the understandings and to determine their concept of an answer for the essential questions with engaging and effective lesson planning (McTighe & Wiggins, 2005).

Here is where I explore engagement in lesson planning strategies for Moving and Learning and what they will look like. Marzano (2010) says that hooking students is essential to good teaching. It is important for learning activities to be captivating because learners who are interested in the topic do better throughout their academic journey to graduation (Bigatti & Svanum, 2009). Moving and Learning and physical education are active in nature because participants must get up and get moving to be engaged most of the time. Participants who are engaged in yoga will use the postures required by a routine. If a student were to choose not to participate with yoga it would be easy to tell simply by looking at them. That person would be doing anything but yoga. The breathing exercise activities would be evaluated very similarly to yoga. An instructor could look at a student and observe them engaging in mindful breathing or not. As far as mindfulness goes it will be much harder to observe activity. Students who are actively mindful or not have the ability to look the same or different. It certain that a teacher can observe disengagement if students are physically and mentally distracted if they are fidgeting or day-dreaming.

An effective plan to teach students the skills to be able to perform Moving and Learning skills will be comprised of research based strategies and for the purpose of designing curriculum, the lesson plans will be created using the overarching themes of researched based strategies of mastery, understanding, self-expression, and interpersonal strategies (Silver, 2007). Multiple researched based strategies like the aforementioned also offer students the opportunity for a differentiated education. Differentiated curriculum is important because teachers are aware of the need to provide a differentiated curriculum (Wormeli, 2007). Consider how different communities, schools, students can

be. Schools today are comprised of multiple cultures, social classes, ethnicities, intellectual, and physical differences. It is also more important than ever for teachers to meet the demands of the law that require all students to be educated, a curriculum designed with differentiation in mind is vital. And as the demand for citizens to compete globally grows, the demand for people who can think in multiple frameworks will also rise. Teachers are being demanded to serve any type of population and must use many types of learning activities and this is why differentiated curriculum is important to address when designing an effective curriculum. Now that the overarching concepts of engaging, effective, differentiated lesson plans have been established I will examine the necessary components of individual lesson design.

Stage one and stage two of the Understanding by Design curriculum model has already determined what we want the students to know and how we can check for their understandings and knowledge. Stage three, lesson planning, assumes that stage one and stage two have been completed properly. It is because of the work put in beforehand that the curriculum designer can hand pick the standards that were previously chosen for each of the lessons. From here the curriculum designer needs to choose learning objectives for specific lessons. Learning objectives are very important and useful in the curriculum design process and “defined as a statement placed within an instructional lesson that describes what the student shall learn.” (Bart, Petkovich, 2008, p. 591). Faulconer (2017) discusses the possibility for increased learning by students if the student awareness of learning objectives is raised by the teacher. Addressing the learning objectives with the students is paramount to ensure that teachers are implementing effective curriculum (Marzano, 2003).

This section has discussed the methods that will be used during the design of the yoga, breathing, and mindfulness curriculum. The first step in this curricular design process was choose a general method and I have chosen the Understanding by Design (Wiggins & McTighe, 2005) method. This method consists of three stages. Stage one is where curriculum designers determine the understandings and established questions within the unit. These understandings and essential questions should line up with the standards of the institution. Stage two of curriculum design has the designer develop the assessments for the curriculum. By designing the assessments based of off the stage one the curriculum the designer is forced to keep themselves in-line with the purpose of the unit. And stage three of Understanding by Design is where the curriculum designer gets to choose the researched based learning experiences that will best prepare the students to meet the demands of the assessments from stage two and reach the desired understandings from stage one.

Conclusion

Chapter three covered the methods used to create an original curriculum for yoga, breathing, and mindfulness. It was of the utmost importance that the methods for the curriculum design come from researched and established practices recommended by the top professionals in the field of education.

The idea of Understanding by Design is contrast to traditional curriculum design because of the order of the steps taken to create the curriculum. Traditional curriculum design puts the learning activities before the development of the assessments seemingly without any desired results. The model used for this curriculum design will be backwards by design.

I first described the macro framework of the design method Understanding by Design and the three stages of the design itself. An important aspect of this style of design is backwards by design process. The curriculum designer needs to begin stage one. Establishing the desired results using desired understandings, established questions, knowledge, and skill is the foundation for this approach. Once the foundation of the desired results are established the curriculum designer can begin stage two and create authentic assessments for them. The assessments are the link between the desired results and stage three, the learning activities.

Chapter four will display the results of the curriculum design methods. I will create a yoga, breathing, and mindfulness curriculum using Understanding by Design for the purpose of high school physical education classes. The curriculum will be created using an Understanding by design documents and will be accompanied by (3 or 4) weeks of learning activities.

CHAPTER 4

Curriculum Design

UbD/DI Unit Plan Template

Stage 1 - Desired Results

Established Goal(s):

Perform Yoga postures.
 Perform mindful breathing techniques.
 Explain personal connections between the mind and body and how they relate to everyday life.
 Provide rationale for a personal moving and learning routine.

Understanding(s):

Students will understand that . . .
 Controlling breath can control emotions.
 Moving and Learning requires a daily routine.
 Moving and Learning reduces stress and improves quality of life.
 Mind and Body connection can be manipulated for positive change.

Essential Question(s):

What is Yoga, Breathing, and Mindfulness and how do they benefit me?
 How does breathing effect change in my body?
 What is stress and what does it feel like?

Knowledge

Students will know . . .
 22 yoga postures.
 5 breathing techniques.
 Mindfulness activities that reduce stress and help learning.
 Physical effects of stress and how to counteract them.
 How to “Set the scene”.

Skill

Students will be able to . . .
 Perform Yoga, Breathing, and Mindfulness skills.
 Create a Moving and Learning routine.
 Recognize stress in their body.

Stage 2 - Assessment Evidence

Performance Task(s):

Demonstrate Yoga, Breathing, and Mindfulness skills.
 Create a Moving and Learning routine.
 Journal reflections.

Other Evidence:

Physical Education class participation.
 Teacher observations.
 Anonymous comment cards “Exit Slips”
 Quizzes.

Stage 3 - Learning Plan

Learning Activities:

Day 1, Introduction to Moving and Learning.
National and Minnesota State Standard
Essential Question #1 “What are Yoga, Breathing, and Mindfulness?”
Description: What is Yoga, Breathing, and Mindfulness? (Appendix A) Take the students through the power point. Lead them in a yoga intro routine of your choice.
Assessment: Exit Slip “What questions do you still have?”
Day 2, Introduction to Yoga Postures.
National and Minnesota State Standard 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, 10.3.1 Student will regularly participate in physical activity.
Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”
Description: Class begins with a review of questions from the “Exit slip” on the previous day. Teacher will introduce the yoga postures (Appendix B) to students. The postures included Mountain, Forward Fold, Down Dog, Plank, Up Dog, Cobra, Warrior I, Warrior II, Triangle. After students have been introduced to the postures they will finish with the Intro to Yoga Postures quiz(Appendix B).
Assessment: Yoga Postures quiz(Appendix B). Review the quiz immediately.
Day 3, Introduction Breathing Skills.
National and Minnesota State Standard: 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and

performance of physical activity.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”

Description: The class will be introduced to the breathing techniques (Appendix C) Diaphragmatic Breathing, Nostril Breathing, Five Finger Breath, Explosive Breathing, and Pulse Count Activity.

Assessment: After the students have been introduced to the breathing techniques the teacher will assign journal prompt, “What breathing skills do you use now and which new skills will you use in the future? When will you use them?”

The whole class will finish with a teacher lead Sun Salutation A (Appendix A).

Day 4, Introduction to Mindfulness skills.

National and Minnesota State Standard: 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”

Description: Begin class with a review of common themes from the journal prompt from the previous day. Introduce mindfulness activities (Appendix D) Body Scan, Gratitude activity, Mindfulness of Nature Visualization, Mindful Listening, The Object Sound Game, Simon Says, and Listening to Intuition.

Assessment: Exit slip “What will you be more mindful of and how will you know you are being mindful?”

Day 5, Fitness, Power Yoga Routine.
National and Minnesota State Standard: 10.3.1 Student participate in regular physical activity, 10.4.1 Students will achieve and maintain a health enhancing level of physical fitness.
Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”
Description: Review themes of exit slip from previous day. Teacher lead class in the power yoga routine (Appendix A).
Assessment: Student yoga rubric (Appendix A) feedback for students ability to complete power yoga routine.
Day 6, Our bodies and stress.
National and Minnesota State Standard: 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity.
Essential Question: #2 “What is Stress and what does it feel like?”
Description: Present the “Stress” PowerPoint (Appendix E).
Assessment: Teacher will prompt students with journal entry about: “What have you done about stress in your life? What new techniques will you use in the future and why?”
Day 7, Reducing Stress Activities.
National and Minnesota State Standard: 10.2.1 Demonstrates the understanding of

movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity.

Essential Question: #2 “What is Stress and what does it feel like?”

Description: Question Review journal themes from previous day. Teacher will engage students in a 10 minute cardio activity (run, jog, jump-rope, etc.) and quickly follow with the Pulse Rate Activity (Appendix C). Next the teacher will lead the class in the Runner's Yoga Routine (Appendix A).

Assessment: Finish class with an exit slip “What can you do about stress?”

Day 8, Balance Yoga.

National and Minnesota State Standard: 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, Standard 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity, 10.3.1 Student will regularly participate in physical activity.

Essential Question: #3 “How does breathing effect change in my body?”

Description: Large group review of themes from the previous day's exit slips. Teacher lead the Balance Yoga routine (Appendix A).

Assessment: Student yoga rubric (Appendix A) feedback for students ability to complete balance yoga routine.

Day 9, Flexibility Yoga.

National and Minnesota State Standard: 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity, 10.3.1 Student participate in regular physical activity.

Essential Question: #3 “How does breathing effect change in my body?”

Description: The teacher will lead the class through the Flexibility yoga routine (Appendix A).

Assessment: Exit Slip “What areas of your body were most affected by the Flexibility routine?”

Day 10, Small Group Routine.

National and Minnesota State Standards Essential Questions 1, 2, &3.

National and Minnesota State Standard: 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity, 10.3.1 Student participate in regular physical activity, 10.4.1 Students will achieve and maintain a health enhancing level of physical fitness, 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting, and 10.6.1 Students will value physical activity health, enjoyment, challenge, self-expression,

and/or social interaction.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”, #2 “What is Stress and what does it feel like?”, #3 “How does breathing effect change in my body?”

Description: Review all yoga postures with yoga posture guide (Appendix A).

Teacher will lead class in mindful community activity (Appendix D).

Assessment: Teacher will assign small groups of 3-5 students to create yoga routine (Appendix F) work time.

Day 11, Small Group Routine Continued.

National and Minnesota State Standard: 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity, 10.3.1 Student participate in regular physical activity, 10.4.1 Students will achieve and maintain a health enhancing level of physical fitness, 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting, and 10.6.1 Students will value physical activity health, enjoyment, challenge, self-expression, and/or social interaction.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”, #2 “What is Stress and what does it feel like?”, #3 “How does breathing effect change in my body?”

Description: Review all yoga postures with yoga posture guide (Appendix A).

Teacher will lead class in mindful community activity (Appendix D).

Assessment: Small groups of 3-5 students continue to create yoga routine (Appendix F) work time.

Day 12, Small group routine.

National and Minnesota State Standard: 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting, and 10.6.1 Students will value physical activity health, enjoyment, challenge, self-expression, and/or social interaction.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”, #2 “What is Stress and what does it feel like?”, #3 “How does breathing effect change in my body?”

Description: Each of the small groups will lead the class through their small group routine (Appendix F).

Assessment: Each of the small groups will lead the class through their small group routine(Appendix F).

Day 13, Small group routine.

National and Minnesota State Standard: 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting, and 10.6.1 Students will value physical activity health, enjoyment, challenge, self-expression, and/or social

interaction.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”, #2 “What is Stress and what does it feel like?”, #3 “How does breathing effect change in my body?”

Description: Each of the small groups will lead the class through their small group routine. With the time remaining the teacher will lead the class through the Core yoga routine (Appendix A).

Assessment: N/A

Day 14, Final Project: Individual Yoga Routine.

National and Minnesota State Standard: 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity, 10.3.1 Student participate in regular physical activity, 10.4.1 Students will achieve and maintain a health enhancing level of physical fitness, 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting, and 10.6.1 Students will value physical activity health, enjoyment, challenge, self-expression, and/or social interaction.

Essential Question: #1 “What are Yoga, Breathing, and Mindfulness?”, #2 “What is Stress and what does it feel like?”, #3 “How does breathing effect change in my body?”

Description: Teacher will lead a brief review of yoga, mindfulness, and breathing skills. Then, individual students will create their personal Moving and Learning routine (Appendix G).

Assessment: (Appendix G).

Day 15, Moving and Learning in Nature.

National and Minnesota State Standard: 10.1.1 Student demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities, 10.2.1 Demonstrates the understanding of movement concepts, principles, strategies tactics as they apply to the learning and performance of physical activity, 10.3.1 Student participate in regular physical activity, 10.4.1 Students will achieve and maintain a health enhancing level of physical fitness, 10.5.1 Students will exhibit responsible personal and social behavior in physical activity setting, and 10.6.1 Students will value physical activity health, enjoyment, challenge, self-expression, and/or social interaction.

Essential Question: : #1 “What are Yoga, Breathing, and Mindfulness?”, #2 “What is Stress and what does it feel like?”, #3 “How does breathing effect change in my body?”

Description: The final day of the Moving and Learning unit. The teacher will collect all individual Moving and Learning assignments (Appendix G). Then the teacher will take the class outdoors for a final Moving and Learning session/celebration, the class will agree on a routine to follow. (Appendix A).

Assessment: (Appendix G).

CHAPTER 5

Results

In this chapter, I am going to take you through my capstone process. First I will talk about how the literature review impacted the design of my curriculum. Then I will consider the possible implications and limitations of my curriculum and my findings after implementation. Next, I will recommend what future research that needs to be done in regards to the curriculum. Finally, I will reflect on my growth and my future agenda.

Literature Review

The literature review was able to provide me with a basic context for developing my curriculum. The literature showed many examples of how different schools were using the Moving and Learning strategies in different settings. From high achieving medical students to students who are underachieving in primary or secondary schools, many of the institutions that participated in the studies examined (Williamson, 2013, Ferreira-Vorkapic, et al., 2015, Khalsa, Hickey-Shultz, Cohen, Steiner, Cope, 2011) would use minimal amounts of the selected Moving and Learning interventions. By this I mean that the participants were exposed to interventions two to three days a week. I knew that my situation was going to be much different from these layouts. The literature review also provided me with ideas of how to present the Moving and Learning activities. It seemed like each of the studies done would use the skills slightly different. This was helpful to me because I can get in a rut easily and the way the activities were being presented really helped me open my mind to new ways thinking that helped me differentiate the way the curriculum would be designed. The literature review also gave me a good idea of how long the sessions could or should last. As a classroom teacher my

time is limited each day with the students. I was able to get comfortable with the idea of making the sessions last different lengths of time, which was not the case early on. All in all the literature review was essential in helping me decide which activities to use, how to implement them, and the time that I needed to do so.

Implications

The possible implications to the Moving and Learning curriculum are many. I will begin by talking about the implications for students. The students that have been exposed to the Moving and Learning curriculum have had mostly positive outcomes. I have reports from students that they feel less stressed or happier after they complete a Moving and Learning activity. Many students also report feeling rested, energised, happy, and eager to learn more. The students have been able to learn the skills from class and apply them to real life. I am having students come up to me and tell me stories about how they used breathing skills in stressful situations or when they have done yoga while at home over breaks as a way to beat the cabin fever they experience. Of course some students reject the ideas incorporated in the Moving and Learning curriculum but typically as the unit moved on some are able to participate.

As far as the school and staff are concerned, the Moving and Learning curriculum has been well received. The idea behind the curriculum are being talked about in casual conversations in the building and some teachers have asked for me to come in and lead Moving and Learning activities in their classrooms. Because the activities can be modified it has been easy to get more students exposed regardless of the setting. I have also led staff only yoga sessions. The staff have requested that I lead them in yoga for

fitness reasons. Overall the Moving and Learning curriculum has been well received by the majority of the students and staff in this building.

Limitations

Some of the possible limitations to the curriculum are that people are still not convinced that Moving and Learning has the ability to effect permanent change in people, yoga is too feminine for them, or they are not interested. When I presented the curriculum to the physical education staff in my district there was a mixed response as far as how receptive teachers were. I noticed that the young teachers were eager to learn about the skills offered in Moving and Learning. As I was teaching the unit the younger teachers were fully engaged. They were trying the moves in yoga, breathing exercises, and mindfulness practices. Then when the time came for skills practice the young teachers were the ones who used the time efficiently and asked many questions about the implementation of the skills and how they might adapt the skills for their populations. On the other hand the more veteran teachers were mostly disengaged. They plainly said that they were not interested in learning new skills in the twilight of their career. I was understanding of the view point, and I tried to get them to at least participate in the practice activities of the younger teachers. In the end most veterans simply stared at their phones to kill time until my presentation was over. Switching gears to limitations I will begin by talking about equipment and facilities. It is easy to understand that not all schools will have the ability to buy yoga mats or all of the mindfulness equipment, which can add up. Thankfully the Moving and Learning curriculum can be altered to adjust for these limitations. Also space for activities can be limited. As I was implementing the curriculum I was limited in my space. I have a small space to lead my physical education

classes, and this makes it difficult at times. Trying to fit my whole class in my modified space proved to be challenging for a couple reason. The first reason is that some participants found it challenging to find a space the let them feel safe. Because yoga can place people in awkward positions I am required to ensure that all the participants feel safe. To help participants feel safe I usually let the females have preferential spots for the exercise. Because the females are allowed to pick spots first I was able to gain more participation out of them. Males did not seem to mind too much about the spots of choice for class. The males present another limitation to the curriculum. The males are quick to think of yoga as a feminine activity and that by participating they will be more feminine. To get around this issue I was able to find video and of professional athletes participating in yoga. The video, along with some coaxing, helped a lot when it came to getting the males comfortable. The final, and maybe biggest limitation, is the religion issue. Some students and parents are concerned about the religious background of yoga and how the activities might affect their lives. I was able to get around the issue a few ways. First, I do not use traditional yoga language such as savasana or tadasana. Being able to find new names for the movements and poses was a good starting point to differentiating Moving and Learning from the religious roots. The next thing I did was to talk through the difference between religion and spirituality. Explaining to parents and students that while participating in Moving and Learning you may experience strong is spirituality and not religion helped gain even more participation.

Future Recommendations for Research/Work

More work needs to be done to help Moving and Learning or other curriculums similar to it, to get into the mainstream schools. Though there is a large body of research

based on yoga, mindfulness, and breathing done in schools, there is little work showing the longitudinal effects of a physical education class that offers yoga a primary topic during the physical education course itself. As yoga continues to gain popularity in western culture schools need to find ways to get curriculums like Moving and Learning as part of their foundation. Once curriculums based off of yoga, mindfulness, and breathing are established in schools researchers will be able to dig deeper into the subject. So many questions still need to be answered and it is my belief that until we get full time curriculums that incorporates elements of yoga, mindfulness, and breathing we will still have those questions. Other work also needs to be done to modify the curriculum that I have created for students with physical disabilities. Many of the poses can be performed in seated positions. Simple modifications that allow physically handicapped people to fully participate will also help the proliferation of Moving and Learning or other curriculums like it because all people will be able to participate.

Personal Development

When I started this project, I had no clue what I was doing. There was some guidance from Hamline on what each chapter was supposed to look like in general but the open ended nature of the capstone process had me reeling. I did not know what to do or where to go, so I began writing. I knew I wanted to do something based on yoga, mindfulness, and breathing but I did not know what that would look like. I was shocked to receive a perfect score on the submission of my first chapter. Perhaps this was because all that was required of me was to submit, the content was not issue for grading this section. Then I went on to begin my literature review. This section of the capstone was where most of my growth took place. I was unfamiliar with the process of a literature

review and I did an awful job. My reviews did not contain what was necessary of a legitimate review. I look back on it now and I chuckle because it was that bad. Then I was supposed to start my methods chapter. I was absolutely clueless on how to set up a proper research question. I struggled with the section for months, I almost abandoned the capstone during this phase. It was not until I was ending a conversation with my primary advisor that I decided to switch my focus from research question to curriculum design. We were ending web based meeting and I made a comment about doing curriculum design instead. Being the diligent advisor he is, he explained to me that if I was more comfortable creating a curriculum that I should do so, and I did. At this point I went back to redraft my chapter one, so I was better aligned with the rest of the capstone. Then I went back and started over on chapter two. This was not as bad as it sounds because this time around I had the experience already so I knew what I was doing and the product of chapter two was far better than I could have imagined and light years ahead of my original draft. My new chapter two was an area where I may have seen the largest amount of personal growth during the entire capstone process. With a solid foundation, finally, in chapters one and two I could safely and confidently begin work on my chapter three, which was only about a year behind at this point. Chapter three was breeze for me and I was able to complete most of the chapter in a few days. This was the point where I needed to set up my proposal meeting. I learned in this meeting that everyone on my committee was there to help me grow and to guide me instead of only offering criticism and cold suggestions. After the meeting I was cleared and ready to begin chapter four. This chapter taught me a lot about how to properly follow the steps of curriculum design. From years past I knew the steps but would sometimes jump over them to get to the

point. Learning how to be patient enough to follow the guides and my plan was huge relief because I knew that what I was doing was correct.

Future Agenda

My future agenda includes continuing research as a way to improve upon the curriculum that I have designed. I will regularly be looking through the latest releases from journals and other sources that can help me improve my craft. Staying relevant in our ever changing world will be top on my list for professionalism. As trends continuously evolve I want to stay ahead of the curve. I am not afraid to try new things, and I will be ready for new things at the culmination of this capstone. I have never had a fear of failure when it relates to content within the Moving and Learning realm.

Aligning with Hamline University's Values

Hamline has really helped me understand how my work can impact all types of people. The values that Hamline holds for creating a diverse and collaborative learning environment has helped me understand how my work will impact more people than I will ever know. Like Hamline, I have a desire to ensure that all of my students are able to get an education regardless of the race, sex, gender, sexual orientation, socioeconomic status, etc. I know that I have have done work that falls in line with these values.

Conclusion

In this concluding chapter, I have discussed so much of this process and the outcomes that were produced. As I talked about the literature review, I explained how I was able to look at the method of administration for the various yoga, mindfulness, and breathing exercises and how that information molded the way I developed the curriculum. Then I went on to explain the limitations to working with the Moving and

Learning curriculum and how social, economic, district curriculums can affect the implementation of the Moving and Learning curriculum. Next, I covered the topic of my plans on how to improve the curriculum. Finally, I talked about my growth as I developed the capstone and how Hamline has impacted that development.

REFERENCES

- Baer, R. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review (PDF download available). *Clinical Psychology Science and Practic*, 10(2), 125-143. doi://dx.doi.org/10.1093/clipsy.bpg015
- Baum, W. (2010). Mindfulness based stress reduction: What it is and how it works. Retrieved from <https://www.psychologytoday.com/blog/crisis-knocks/201003/mindfulness-based-stress-reduction-what-it-is-how-it-helps>
- Baldini, L., Parker, S., Nelson, B., & Siegel, D. (2014). The clinician as neuroarchitect: The importance of mindfulness and presence in clinical practice. *Clinical Social Work Journal*, 42(3), 218-227. doi:10.1007/s10615-014-0476-3
- Belfield, C., Bowden, A. B., Klapp, A., Levin, H., Shand, R., & Zander, S. (2015). The economic value of social and emotional learning. *Journal of Benefit-Cost Analysis*, 6(03), 508-544.
- Broderick, P. C. (2013). *Learning to breathe A mindfulness curriculum for adolescents to cultivate emotion regulation, attention, and performance*. Oakland, CA: Oakland, CA : New Harbinger Publications.
- Brookhart, S.M. (2013). *How to create and use rubrics for formative assessment and grading*. Alexandria: ASCD.
- Burdick Lcswr Bcn, D. (2014). *Mindfulness skills for kids & teens* Pesi Publishing & Media. Retrieved

from <http://www.vlebooks.com/vleweb/product/openreader?id=none&isbn=9781937661595&uid=none>

Butzer, B., van Over, M., Noggle Taylor, J. J., & Khalsa, S. B. S. (2015). Yoga may mitigate decreases in high school grades. *Evidence - Based Complementary and Alternative Medicine*, 2015, 1-8. doi:10.1155/2015/259814

Daly, L. A., Haden, S. C., Hagins, M., Papouchis, N., & Ramirez, P. M. (2015). Yoga and emotion regulation in high school students: A randomized controlled trial. *Evidence - Based Complementary and Alternative Medicine*, 2015, 1-8. doi:10.1155/2015/794928

Dunn, J. (2017) The art of meditation. *Time Magazine: Special Edition*, , 44-53.

Editors, Bonnie Horgos, Peg Mulqueen, Alice Walton, & Erica Rodefer. (2014). THE YOGA revolution. *Yoga Journal*, (262), 68-75.

Essential questions (2013). . Alexandria: ASCD. Retrieved

from <http://ebookcentral.proquest.com/lib/hamline/detail.action?docID=1164262>

Faulconer, E. K. (2017). Increasing student interactions with learning objectives.(report). *Journal of College Science Teaching*, 46(5), 32.

Felver, J. C., Doerner, E., Jones, J., Kaye, N. C., & Merrell, K. W. (2013). Mindfulness in school psychology: Applications for intervention and professional practice. *Psychology in the Schools*, 50(6), 531-547. doi:10.1002/pits.21695

- Folletto, J., Pereira, K., & Valentini, N. (2016). The effects of yoga practice in school physical education on children's motor abilities and social behavior. *International Journal of Yoga, 9*(2), 156-162. doi:10.4103/0973-6131.183717
- Homma, I., & Masaoka, Y. (2008). Breathing rhythms and emotions. *Experimental Physiology, 93*(9), 1011. doi:10.1113/expphysiol.2008.042424
- Hoy, W. K., Gage, C. Q., & Tarter, C. J. (2004). Theoretical and empirical foundations of mindful schools. *Educational Organizations, Policy and Reform: Research and Measurement, , 305-335.*
- Hoy, W. K., Gage, C. Q., & Tarter, C. J. (2006). School mindfulness and faculty trust: Necessary conditions for each other? *Educational Administration Quarterly, 42*(2), 236-255. doi:10.1177/0013161X04273844
- Hoy, W. K., & Tschannen-Moran, M. (2007). The conceptualization and measurement of faculty trust in schools. *Essential Ideas for the Reform of American Schools, , 87-114.*
- Khalsa, S. B. S., Hickey-Schultz, L., Cohen, D., Steiner, N., & Cope, S. (2011). Evaluation of the mental health benefits of yoga in a secondary school: A preliminary randomized controlled trial. *The Journal of Behavioral Health Services & Research, 39*(1), 80-90. doi:10.1007/s11414-011-9249-8
- Kinder, M. (2017). Why mindfulness belongs in the classroom. Retrieved from <http://www.mindful.org/why-mindfulness-belongs-in-the-classroom/>

- King, P. E., & Sawyer, C. R. (1998). Mindfulness, mindlessness and communication instruction. *Communication Education, 47*(4), 326.
- Marzano, R. J. (2003). *What works in schools : Translating research into action*. Alexandria, Va.; Alexandria: Alexandria, Va. : Association for Supervision and Curriculum Development.
- Marzano, R. J. (2010). In Pickering D. J. (Ed.), *Highly engaged classroom*. Bloomington: Bloomington : Marzano Research.
- Mendelson, T., Greenberg, M. T., Dariotis, J. K., Gould, L. F., Rhoades, B. L., & Leaf, P. J. (2010). Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth. *Journal of Abnormal Child Psychology, 38*(7), 985-994. doi:10.1007/s10802-010-9418-x
- Paul, G., Elam, B., & Verhulst, S. J. (2007). A longitudinal study of students' perceptions of using deep breathing meditation to reduce testing stresses. *Teaching and Learning in Medicine, 19*(3), 287-292. doi:10.1080/10401330701366754
- Perkins, D. (1994). Do students understand understanding? *The Education Digest, 59*(5), 21.
- Petkovich, M. & Bart, W. M. (2008). Learning objectives. *Encyclopedia of Educational Psychology, 2*, 591-592.
- Prado, E. T., Raso, V., Scharlach, R. C., & Kasse, C. A. (2014). Hatha yoga on body balance. *International Journal of Yoga, 7*(2), 133-137. doi:10.4103/0973-6131.133893

- Richter, S., Tietjens, M., Ziereis, S., Querfurth, S., & Jansen, P. (2016). Yoga training in junior primary school-aged children has an impact on physical self-perceptions and problem-related behavior. *Frontiers in Psychology, 7*, 203.
doi:10.3389/fpsyg.2016.00203
- Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of Behavioral Medicine, 21*(6), 581-599.
- Silver, H. F. (2007). In Strong R. W., Perini M. J. (Eds.), *The strategic teacher : Selecting the right research-based strategy for every lesson*. Alexandria, VA: Alexandria, VA : Association for Supervision and Curriculum Development.
- Steiner, N. J., Sidhu, T. K., Pop, P. G., Frenette, E. C., & Perrin, E. C. (2013). Yoga in an urban school for children with emotional and behavioral disorders: A feasibility study. *Journal of Child and Family Studies, 22*(6), 815-826. doi:10.1007/s10826-012-9636-7
- Svanum, S., & Bigatti, S. M. (2009). Academic course engagement during one semester forecasts college success: Engaged students are more likely to earn a degree, do it faster, and do it better. *Journal of College Student Development, 50*(1), 120-132.
doi:10.1353/csd.0.0055
- Taren, A. A., Creswell, J. D., & Gianaros, P. J. (2013). Dispositional mindfulness co-varies with smaller amygdala and caudate volumes in community adults. *Plos One, 8*(5), e64574. doi:10.1371/journal.pone.0064574

- Tummers, N. (2005). Yoga for your students. *Strategies*, 19(2), 35-37.
doi:10.1080/08924562.2005.10591184
- Vertinsky, P. (2014). Yoga comes to american physical education: Josephine rathbone and corrective physical education. *Journal of Sport History*, 41(2), 287-311.
doi:10.5406/jsporthistory.41.2.287
- Vickery, C. E., & Dorjee, D. (2016). Mindfulness training in primary schools decreases negative affect and increases meta-cognition in children. *Frontiers in Psychology*, 6, 2025. doi:10.3389/fpsyg.2015.02025
- ViewPoint Student data (2017). Retrieved from <https://viewpoint.anoka.k12.mn.us/main.aspx#ReportTab>
- Webb, N. L. and others. (2006). *Depth of knowldege*. University of Wisconsin Madison.: Wisconsin Center for Educational Research.
- Wiggins, G. & McTighe, J. (2005). *Understanding by design (expanded)*. Alexandria: Association for Supervision & Curriculum Development.
- Wilhelm, J. D. (2012). Essential QUESTIONS. *Instructor*, 122(3), 24-27.
- Wilkinson, L., Buboltz, W. C., & Seeman, E. (2001). Using breathing techniques to ease test anxiety. *Guidance & Counselling*, 16(3), 76. Retrieved from http://hamline.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwtV1LS8NAEB5sQfAiPIGrSjHwItGmmybtwUMr1R48iKZ4LJvsBottCn2A_ntndpNNWqHwUsoU9ilfNN55dtvAXjjpu6sxYQoabYTzDS-iLiUWEXXZUPh36zZ1gV8bOb74cDrv3jd4vLNwvavwKMNoaeDtH8A3y6KBvy

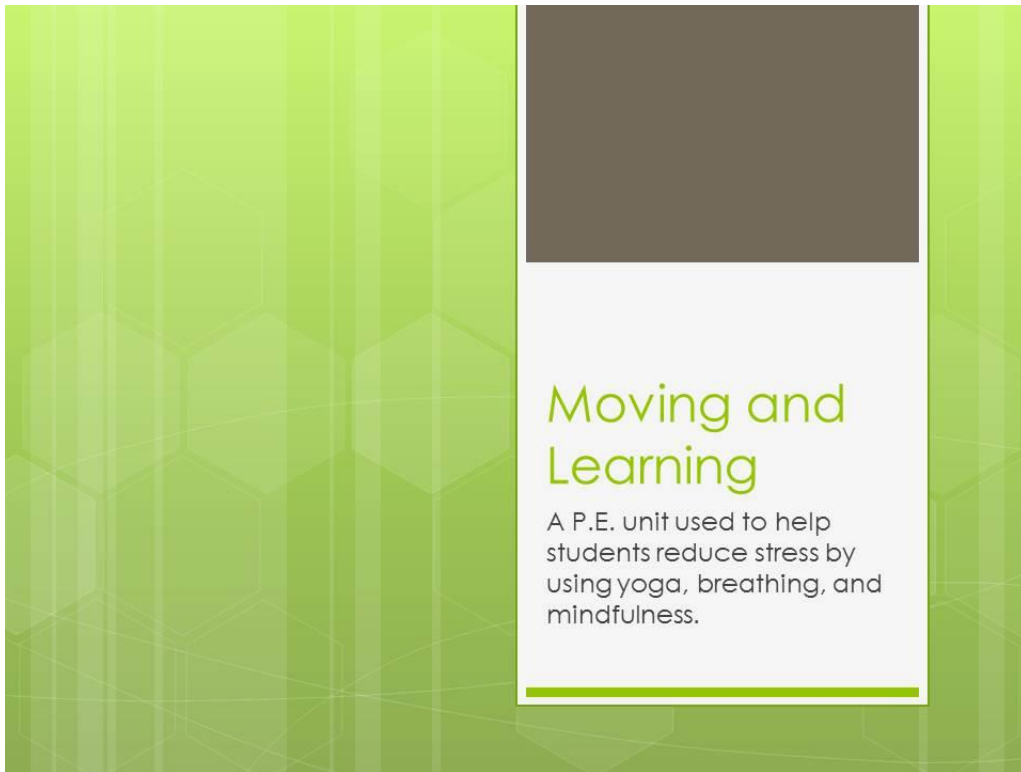
[MLoBPdAJ8_soNDCUgotJQz5qsZqtWdqB3M2iaE838M5cEyWvVx-
VI6gMF5B3Z2fVxnunMqObDnh17EhNheb7dZTQd64tir9_06_jSLFapbOZKEXh15
uCWqCrkJXZ_PYE2NGRBSiFfOR3SMFPQvkovCY0qQznGcdfBFpWvBGS_5Hi8
FF2DNdFsk4YDEj3Eda5ILH0iR_HiTqXO4LUCFR4Qy7PXebbJGftHTTrI9_2Rgn
VdEe7BbtYQsI6Bbh-2VHpAd2Inv-
4QbjWEzELICgjZYsoIQkYQsgzCI7h86IX3fSffcZg5ynxIovouidvzY6im01SdAGvJ
xPOCRAatJPKaMhZYiQk_xv7WTXw_ap9CbcNCZxu_rcFOges5VBezpbqA7Xcxo
ebmG7H0Mlk](#)

Willamson, L. A. (2013). Yoga in public schools. *Education Digest*, 78(5), 35-37.

Wormeli, R. (2007). *Differentiation : From planning to practice, grades 6-12*. Portland,

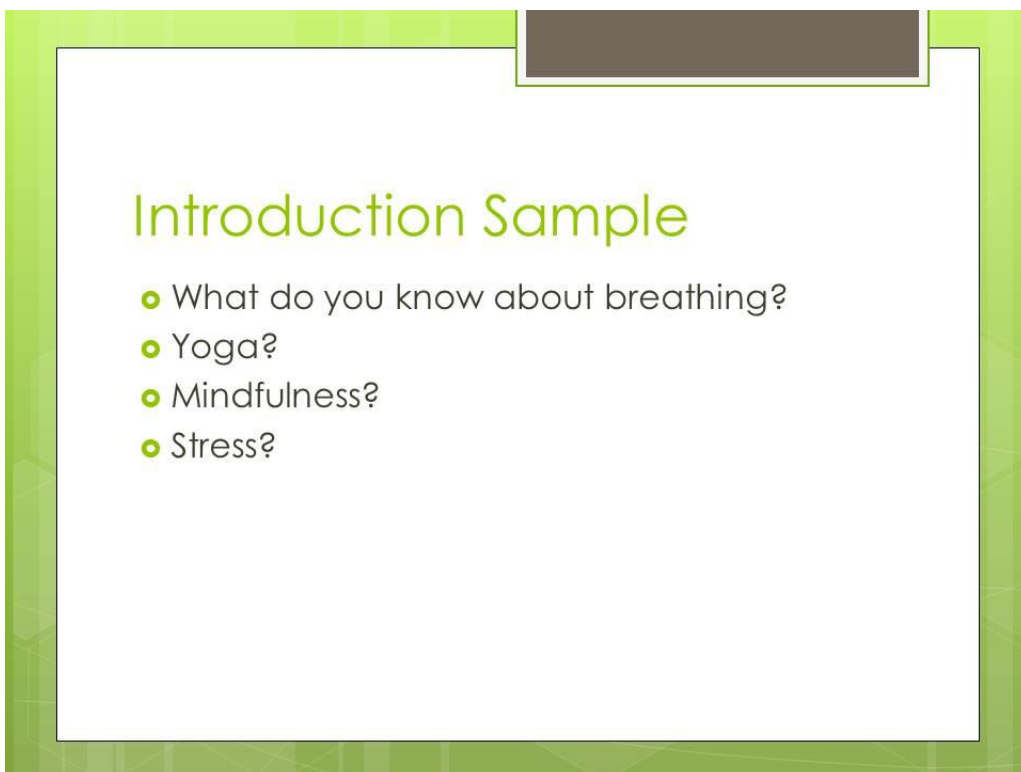
Me: Stenhouse Publishers.

APPENDIX A



Moving and Learning

A P.E. unit used to help students reduce stress by using yoga, breathing, and mindfulness.



Introduction Sample

- What do you know about breathing?
- Yoga?
- Mindfulness?
- Stress?

Diaphragmatic Breathing



- Practice
- Lie on back
- Close eyes
- Hands on belly
- Breathing through Nose
- Expand and contract diaphragm

Yoga



- Ancient, 3000+ years
- Breath, Meditation, and Postures
- Connection of all
- Convenient and affordable
- Reduce stress
- Increase strength, flexibility, posture, coordination, image

Safety

- Never Pain – Stop before anything hurts. You will be able to go farther as you progress in your practice.
- Try it – Don't say I can't, you are here to learn
- Clean your mat before and after practice with spray and paper towel.
- Report any injuries/questions

Sun Salutation A

- Child's Pose
- Cobra
- Plank
- Forward Fold
- Half Lift
- Forward Fold
- Chair Pose

Mindfulness



- Focus on controlling breath
- Control what you thinking about
- Control emotions/reactions
- Reduce stress

Exit Slip

- Take a note card and answer the prompts
- What did you learn?
- What questions do you have?

APPENDIX B**Yoga Poses and Rubric****3 Legged Down Dog**

Instructions: down dog with one leg extending the heel to the rear and up

Attention Language: “From Down-dog extend one leg back by driving the heel up and out”



3 Legged Crunch

Instructions: From 3 legged down-dog bring you extended leg to you elbow and repeat.

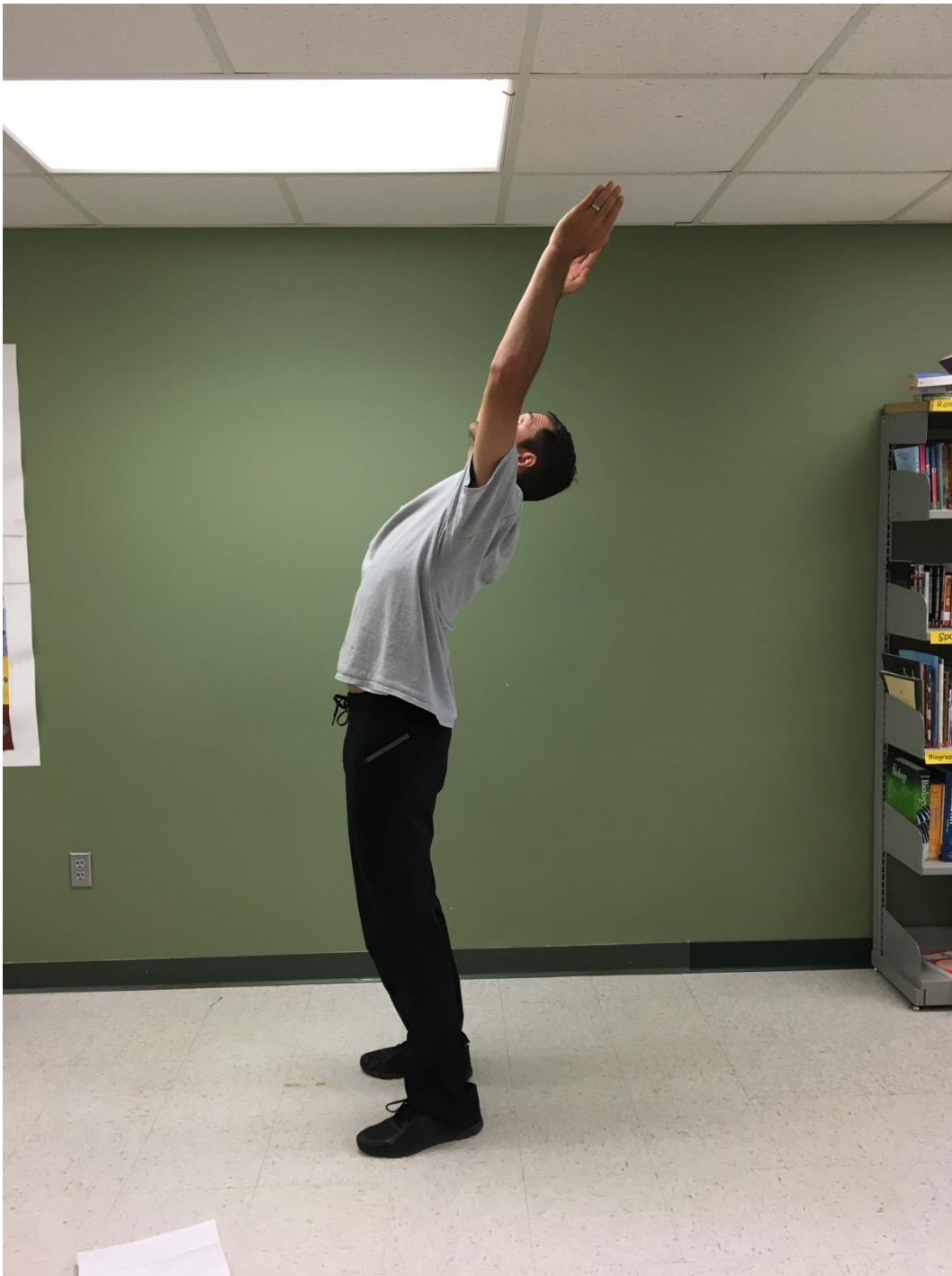
Attention Language: “From Down-dog extend one leg back by driving the heel up and out, now bring that leg back in and touch your elbow”



Back Bend

Instructions: From Mountain pose reach look up and reach back.

Attention Language: “From Mountain pose we are going to a back bend. Lift your chest to the sky and reach back.”



Bridge

Instructions: lying on back move feet towards but lift hips by squeezing the glutes

Attention Language: “Lying on our back we will bring our feet under our knees. Now lift your hips by squeezing your glutes and hold for one second at the top.”



Camel

Instructions: From kneeling round shoulders back lift chest look up hips forward

Modification: Look up and micro bend

Attention Language: “From Kneeling we are going to move to camel. Move at your own pace here, NEVER pain. Slowly reach your hands back, lift your chest, and look up. After being here for few breaths try to push your hips forward and increase the bend.”



Cat-Cow

Instructions: From Tabletop you Cat drop head round back squeeze glutes, Cow lift chest look up arch back

Attention Language: “From Tabletop we are going to start Cat-Cow. Inhale to Cow and exhale to Cat. We are going to repeat this for a few breaths here. This activity is to help warm up your spine.”



Chair Pose

Instructions: feet together hands to heart center sit, chest lifts up, up dive

Modification: Sit in chair

Attention Language: “Now we will enter the chair pose, feet together, hands at heart center, sit back. Evenly distribute the weight in your feet. Control your breath here.”



Childs Pose

Instructions: big toes together fold at waist hands in reach in front relax head and neck

Attention Language: “Time for a little rest here. Place your big toes together and open the hips.

Hinge at the hips and fold forward. Reach your hands in front of you and let you head drop.

Release all you tension here. Relax.”



Cobra/Up-Dog

Instructions: lower to belly from plank position and lift the chest with the back muscles, tops of feet down, (Up-Dog, press up with hands and tops of feet, look up)

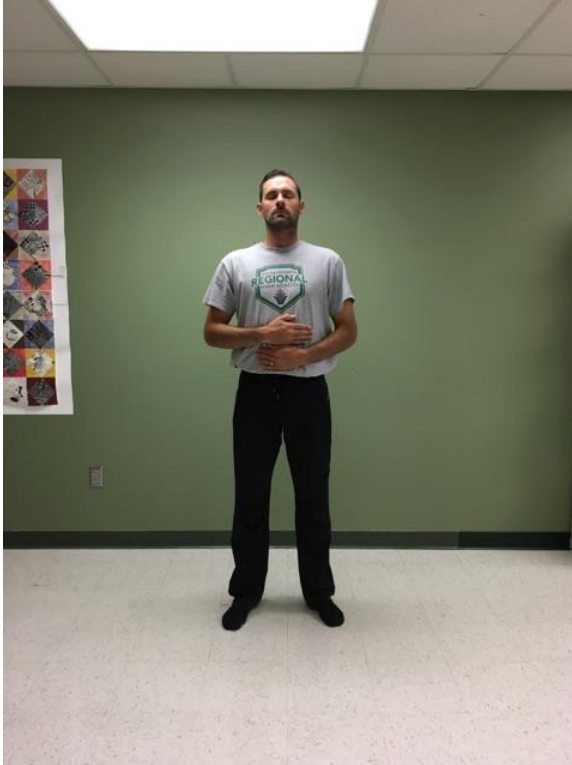
Attention Language: Cobra “After lowering from plank lift the chest with using your back muscles and a little help from the arms, NEVER pain, tops of feet should be down” Up-Dog “After lowering from plank position press the hands and tops of feet into the earth and lift the upper body into Up-dog, raise the chest, open the shoulders and look up”



Cover belly

Instructions: Mt. arms hug belly

Attention Language: “Gently hug your belly”



Crescent

Instructions: runner's lunge with back knee down

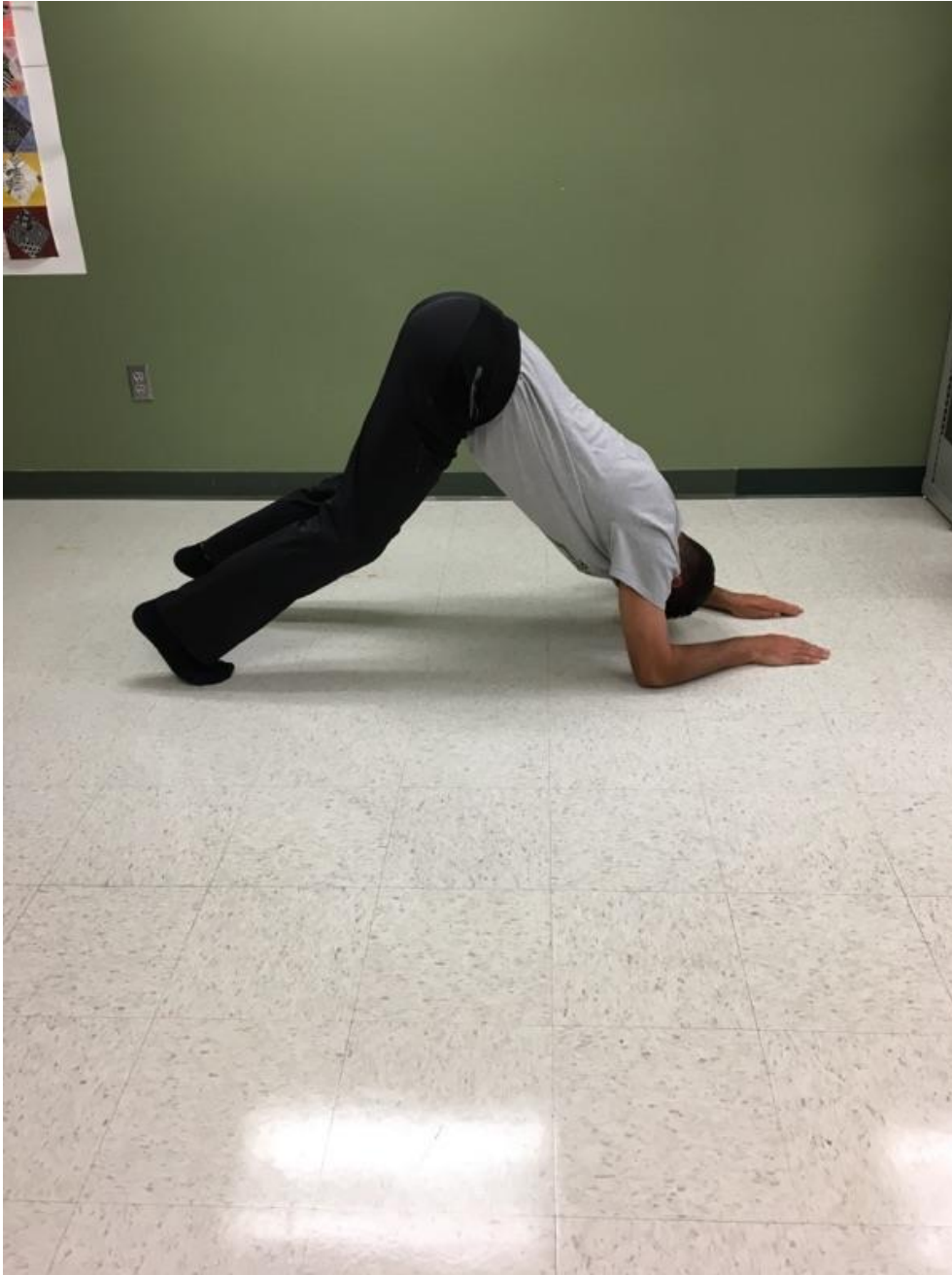
Attention Language: "We are doing crescent now. It is just like a runner's lunge but we are going to drop the back knee to the earth."



Dolphin

Instructions: from low plank push into down dog

Attention Language: “From Low Plank we are going to try to push ourselves into a Down-dog like position by elevating our hips into the air. Bend your knees as needed.”



Down Dog

Instructions: Hands shoulder width apart fingers spread weight on finger tips and pads of hands, bend the knees and rotate pelvis to the sky, attempt to get flat feet and straight knees

Attention Language: “Now press into Down-dog. Firmly place your hands down on the earth and push yourself into the pose. Keep a slight bend in the knees so you rotate your pelvis up. Your goal is to get your spine into straight line with your wrists, shoulders, and hips. This is a resting position so get comfortable.”



Figure four

Instructions: place one foot and the knee of the opposite leg, bring up the knee and squeeze for stretch.

Modification: Seated or reclined figure four

Attention Language: “To enter the figure four we need to place one of our feet on the knee of the opposite leg. Bring the knee into the core to increase the stretch.”



Final Rest

Instructions: lie on back eyes closed arms at side palms up

Attention Language: “Final Rest, lie on your back with your arms at your side and palms up.

Close your eyes and breath, relax, refocus your mind.”



Forward Fold

Instructions: hinge at the hip, micro bend in the knees

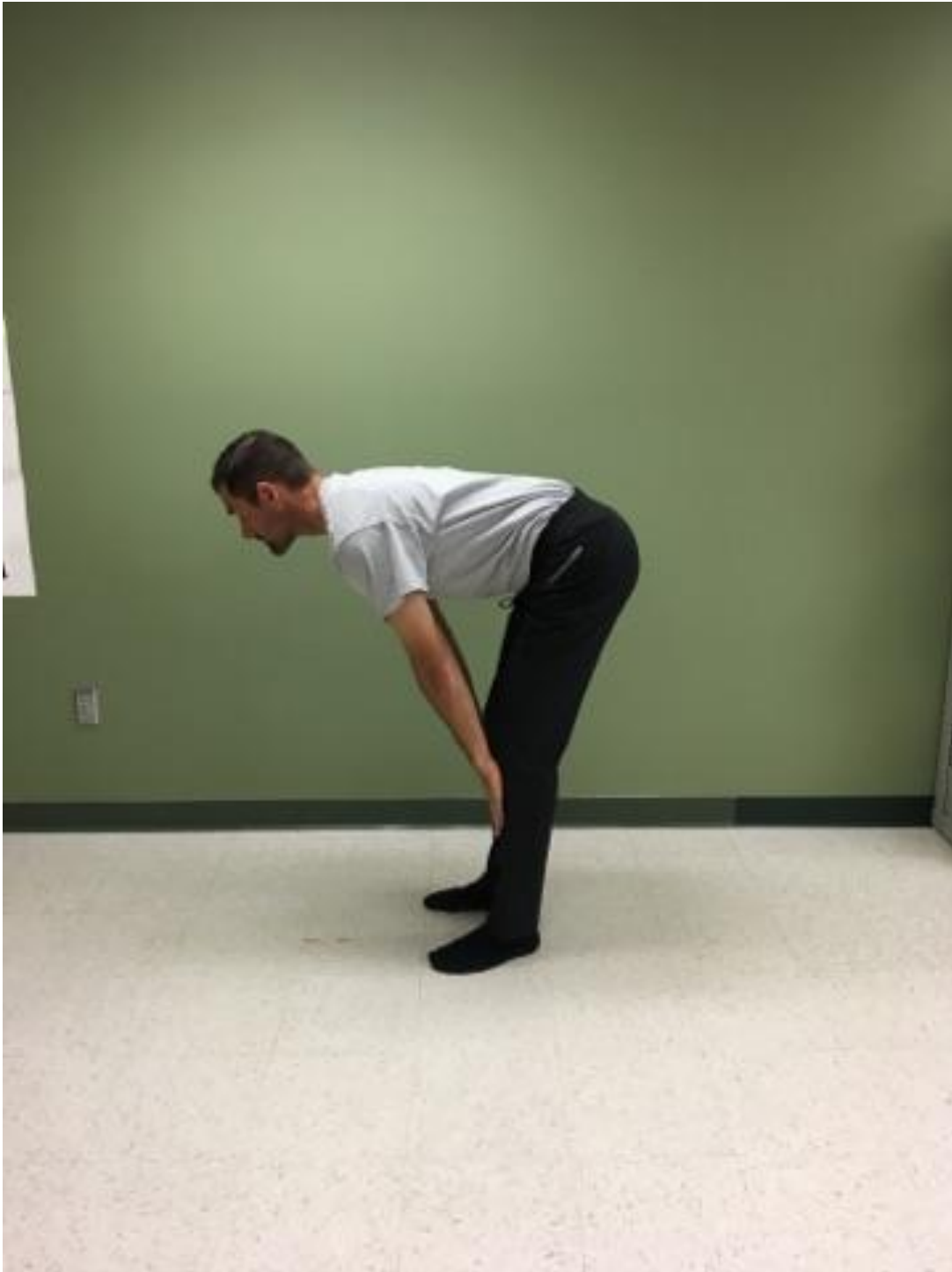
Attention Language “From Mt. we will exhale and hinge at our hips into a forward fold, keep a micro bend in the knees.”



Half Lift

Instructions: from forward fold, inhale to flat back

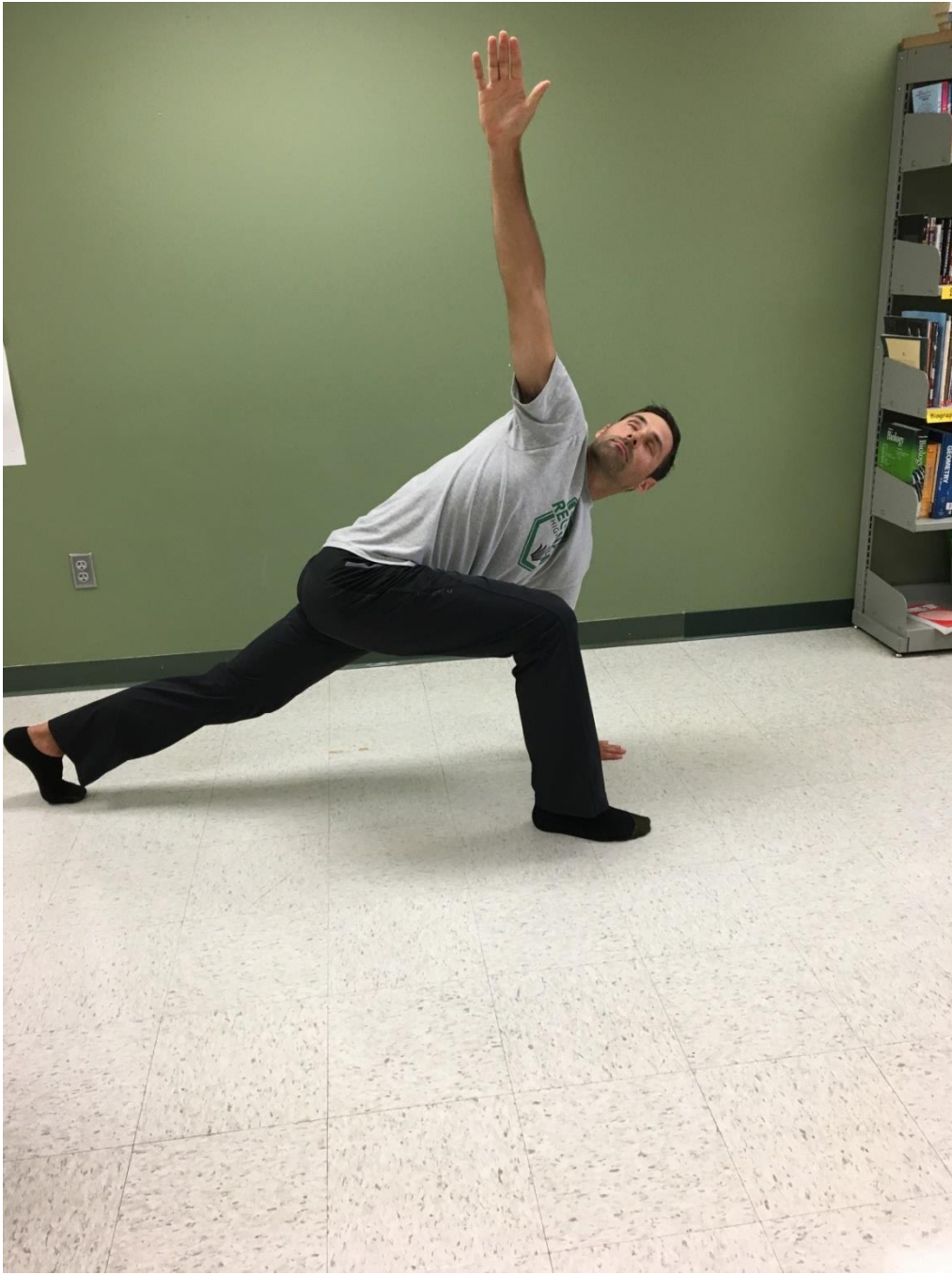
Attention Language: “From forward fold we are taking a breath in and lifting half way sliding our hands up our legs and getting our spine parallel with the earth.”



Half-Moon Pose

Instructions: From lizard twist into your body towards the leg side and reach up to the sky.

Attention Language: “Now we are going to move to half-moon. Step your leg up to the outside of the hand of the same side. Twist into the leg that is up and reach to the sky.”



Hands to Heart Center

Instructions: palms together over center of chest.

Attention Language: “From up dive we will exhale and bring our hands to heart center”.



Hang

Instructions: Forward fold while letting up body go limp

Attention Language “In our forward fold we will let go of the tension in our upper body and let our mass hang, continue to control your breathing”



Happy Baby

Instructions: lie on back brings legs up with bent knees and grab feet or hamstring

Attention Language: “From lying on our backs we are going to enter Happy Baby pose. Bring your legs up and bend your knees so they are on you oblique’s and grab your feet or hamstrings.

Rock around in this position and experiment with squeezing for more of a stretch.



Hip Circles

Instructions: From table top rotate the legs and open up the hips

Attention Language: “From tabletop we are going to start hip circles. Take your leg and make as big of a circle as you can comfortably.”



Interlace fingers/Pistol Grip

Instructions: pictures.

Attention Language: “Bring hands together and alternate fingers.”



Inverted Shoulder Stretch

Instructions: Forward Fold interlace fingers behind back, hands over-head

Modification: Reach back

Attention Language “From the forward fold we will interlace our fingers behind our backs, then we will begin to move our arms up over our head, NEVER pain”



Kneeling

Instructions: firm like Mt. but on knees

Attention Language: “We are going to Kneeling now. Same as Mt. but on your knees. Keep the core muscles engaged, squeeze the glutes and roll your shoulders back and down”



Leg Over Twist

Instructions: from lying on back bring one leg over and twist into the hip of same leg.

Attention Language: “From our lying position we will bring one leg up and across our body.

Keeping the shoulders flat to the earth find more room as you twist.”

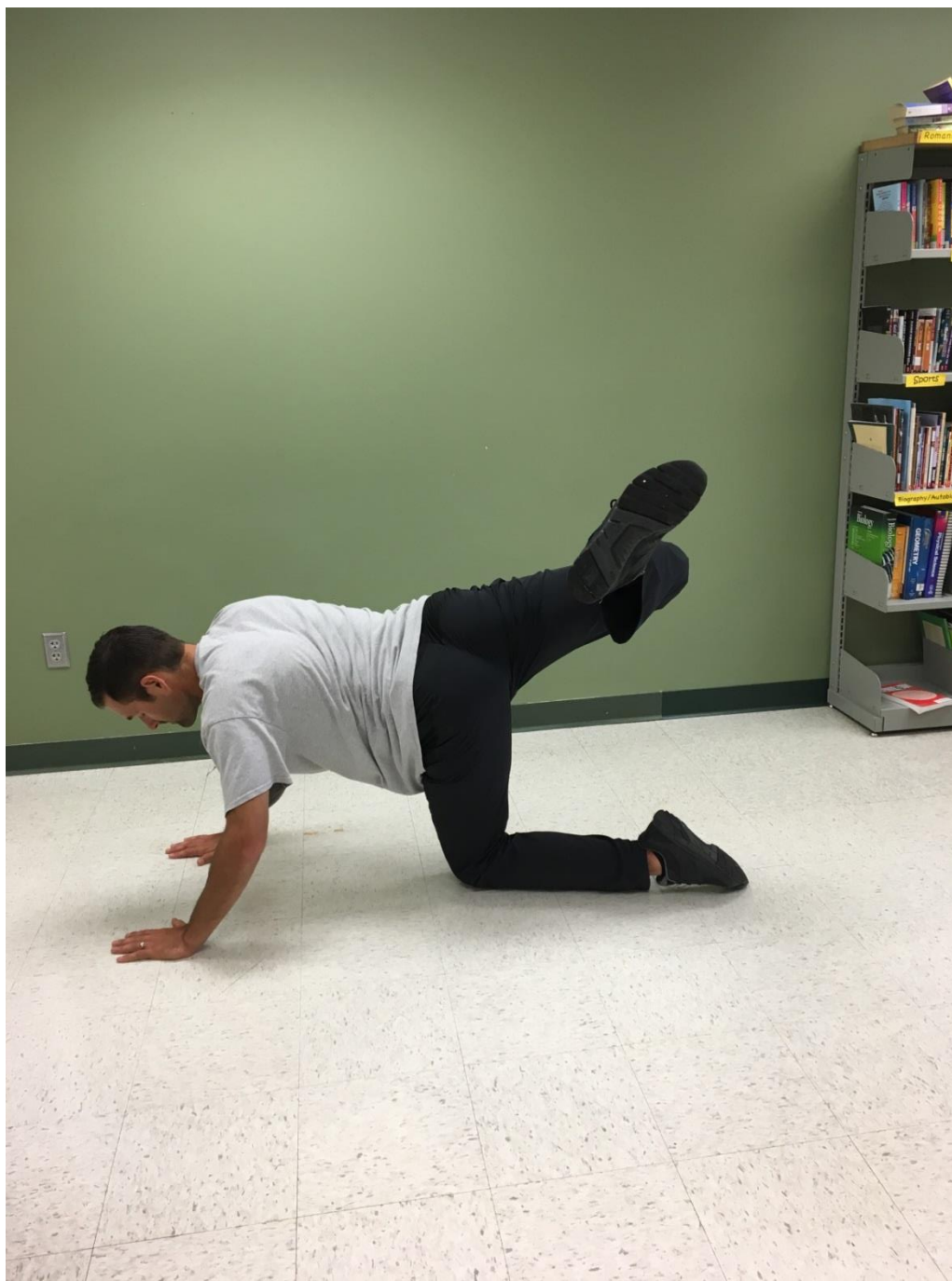


Leg Over Reach

Instructions: From table top reach leg over to open hip

Attention Language: “From table top take your leg and reach it behind your body and over.

Keep you shoulders and hips square.”



Lizard

Instructions: from plank set one leg up so the foot is next to the hand on the same side

Modification: Bring knee to hand

Attention Language: “From Plank we are going to step one foot up next to our hand. Keep your body in a straight line and soften as you stretch.”



Mountain Pose

Instructions: root feet, shoulders back and down, hands at side, lengthen body from crown of head to heels tighten abs and pronate pelvis opposing forces.

Modification: Seated

Attention Language: “Root your feet, Deep breathing, Roll shoulders back.”



Neck Roll's

Instructions: Full range of motion clock/counterclockwise rotations

Attention Language: “Roll your head in a full range of motion clockwise for a few revolutions, then switch directions for a few more”

Neck Stretch

Instructions: head to side opposite shoulder down opposing forces

Attention Language: “Lean your head to one side and drop the opposite shoulder, opposing forces. Soften here, do not overdo it, NEVER pain.”

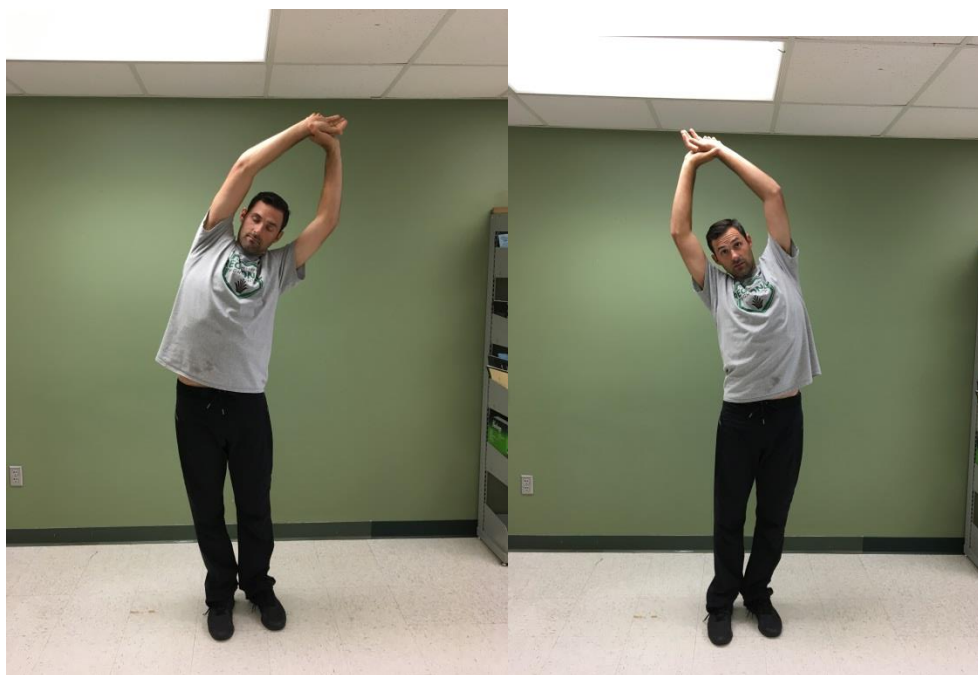


Overhead Shoulder Stretch

Instructions: interlace fingers and reach arms over-head. Mo

Modification: Hands in front of chest

Attention Language “Interlace fingers and begin to raise arms up and over the head, breath into the tightness in shoulders, Never should you feel pain.”



Pigeon

Instructions: from seated extend one leg back and lift the chest shoulder back and down

Attention Language: “Let’s loosen up those glutes. From seated we will drive one leg straight back while keep the other folded in front of us. Sink into the front hip and soften.”



Plank/Low Plank

Instructions: one hands/elbows keep the body rigid by engaging the core muscles and glutes

Attention Language: “From a forward fold/down dog we are going into plank position. Fingers spread wide and hands shoulder width apart and up on our toes. Keep the body rigid by contracting the core muscles and glutes.”



Pyramid

Instructions: hips shoulders feet facing forward, take a small step and root both feet

Attention Language: “From Mt. we will take a small step forward keeping our feet, hips, and shoulders facing forward. Even weight distribution between the feet. Hinge at the hips.”



Reclining Half Cow

Instructions: Cross legs touching thighs no space, crunch and grasp feet, flat back knees to chest

Attention Language: “Going to Reclining Half Cow we will lie on our backs cross our one leg over the other eliminating space between both legs. From here we want to capture our feet and gently pull them into our body. Keep you low spine in contact with the ground as you try to reach your chest with your knees.”



Rooting

Instructions: find the four corners of your foot, equal pressure on all four corners.

Attention Language “Your feet have four corners. Two at the front and back on both sides.

Standing on your feet I want you to circle around your feet to find all four of the corners on both feet. Once you have found all corners settle the circling and keep your weight evenly distributed on each of the points”

Runners Lung

Instructions: hips shoulders feet facing forward, one big step up, sink into front leg

Attention Language: “Let us get into runner’s lunge now. Take a big step forward and place that foot flat on the ground, the back foot should be up on toe. Keep your feet, hips, and shoulders facing forward and sink into the front leg”



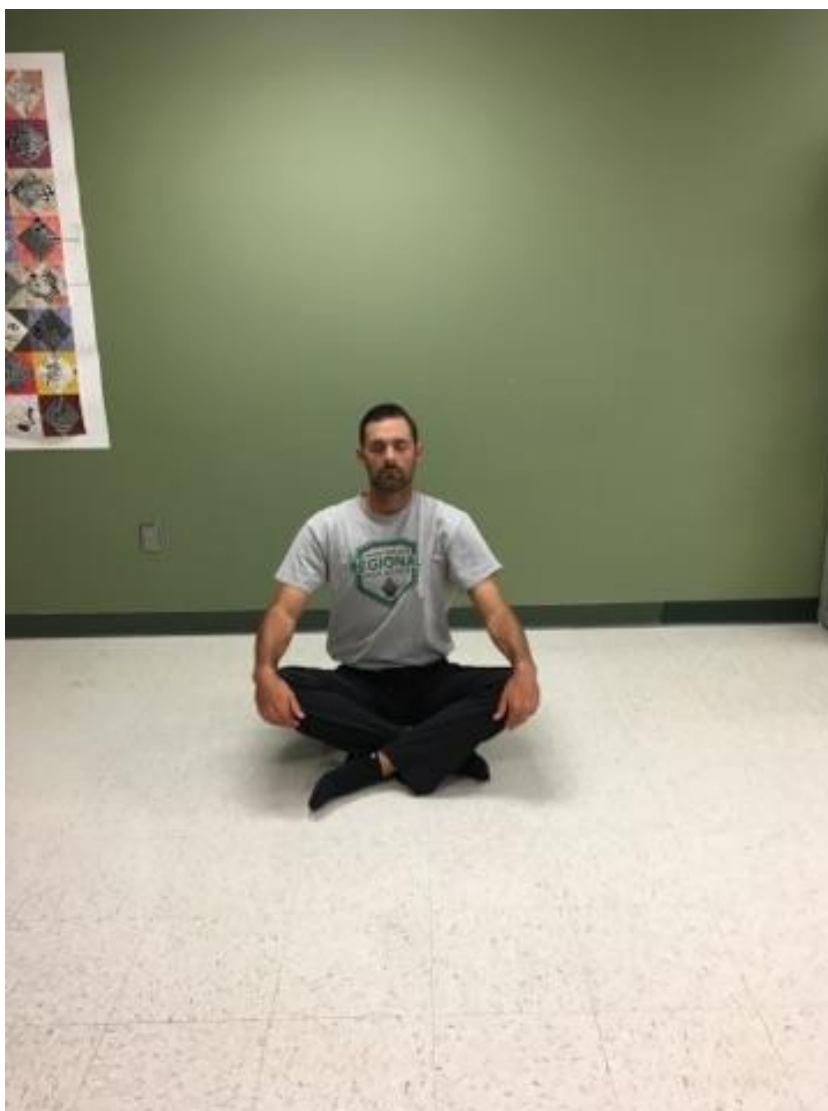
Seated

Instructions: legs crossed chest up shoulder back and down lengthen from tailbone to crown of head opposing forces

Modification: Legs straight, hands at heart center

Attention Language: “Sit with your legs crossed or straight, keep shoulders back and down while

lifting the crown of your head. Opposing forces lengthen the spine.”



Seated Side Stretch

Instructions: from seated reach one arm over the top, keep sit bone on stretch side in contact with earth

Attention Language: “From our seated position we will reach over the top of our body to one side. Keep the sit bones in contact with the earth to get a better stretch.”



Side Lunge

Instructions: from Mt. step to one side, keep chest up, sink into lunge

Attention Language: “From Mt. pose step to one side. Keeping both feet flat on the earth sink into the side you stepped to. Keep your chest up”



Side Plank

Instructions: Arm should be straight down from shoulder, stack the feet, keep hips up.

Attention Language: “Moving to side plank place your elbow on the ground and stack one foot on top of the other. Keep your hips up and stay as stiff as a board. Focus on your breathing when you feel like dropping.”



Squat

Instructions: feet shoulder width apart, bend at the knees, keep chest lifted, and rise.

Attention Language: “Feet shoulder width apart. Bend at the hips, knees, and ankle while keeping the chest high. Lower so your thighs are parallel to the earth. Rise.”



Superman

Instructions: on belly lift chin and chest shoulders and hands back lift legs then arms forward and lengthen opposing forces

Attention Language: “From our bellies we begin superman. Roll your shoulder back and down with your arms behind you and lift your chest up. Engage the back muscles. Now, lift your legs up off the ground as well. Now we will bring our arms in front and reach. Make your body longer, opposing forces”



Superman with interlace behind back

Instructions: Roll shoulders back and interlace hands

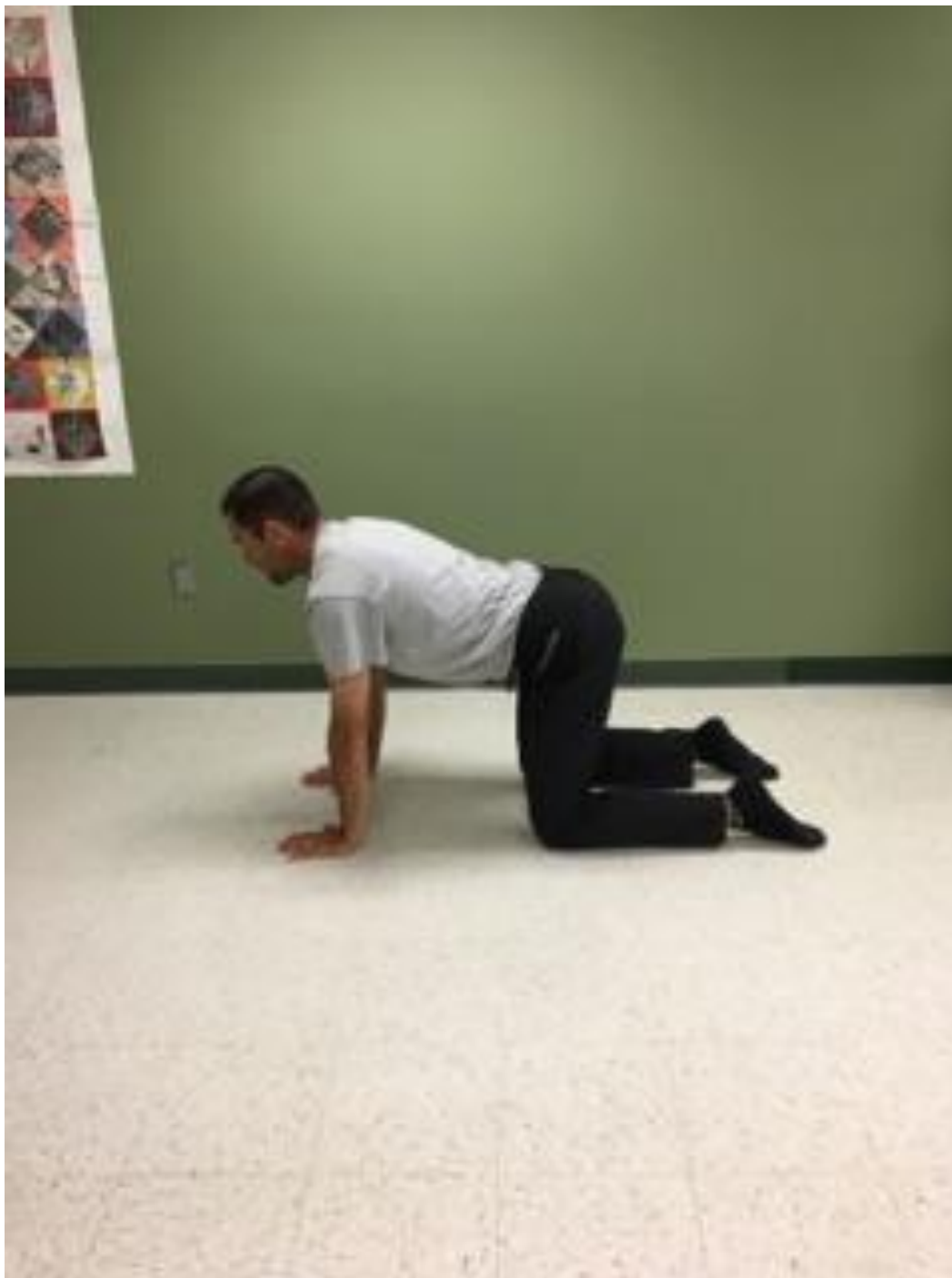
Attention Language: “From superman we are going to roll our shoulders back and interlace our hands.”



Tabletop

Instructions: fingers spread with hands shoulder width, knees under hips, toes tucked

Attention Language: “Get into Tabletop. Hands underneath shoulders, fingers spread wide, knees straight down from hips and toes curled under”

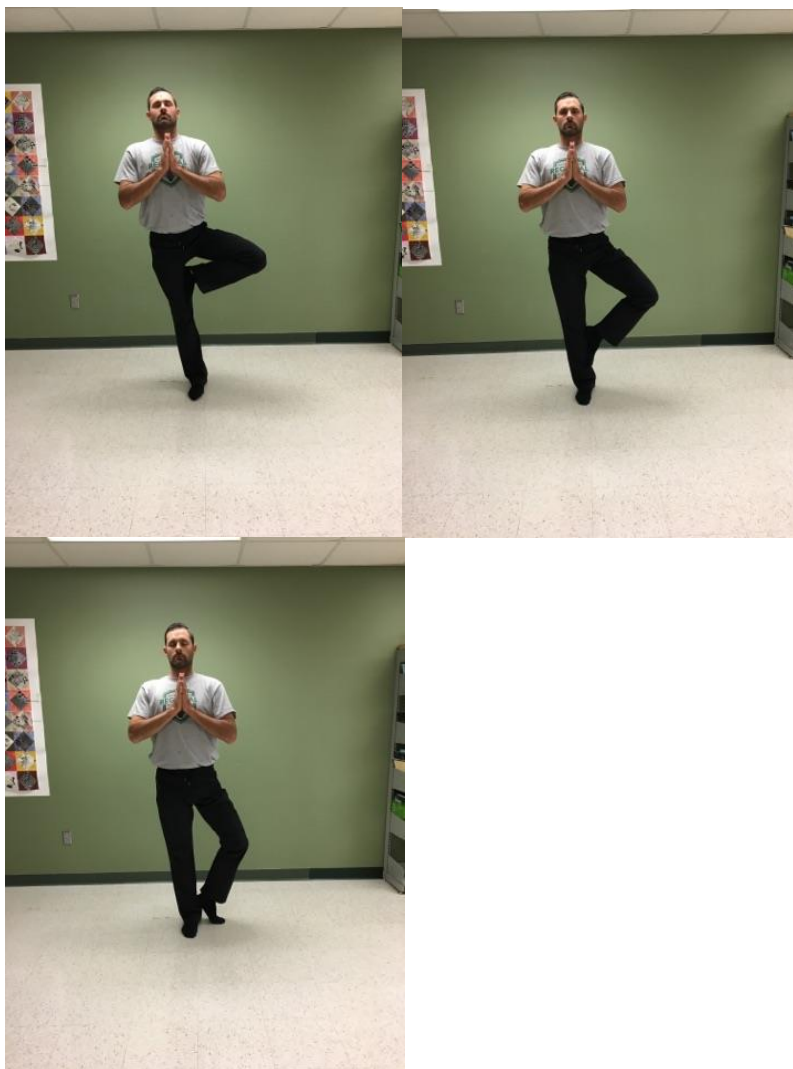


Tree Pose

Instructions: Rooting on one foot bring hands to heart center and lift other leg and press into upper thigh, NEVER on knee.

Modification: Put foot lower on calf or ankle.

Attention Language: “Moving to tree we will root all our weight into one foot. Bring you Hands to Heart Center we lift our other leg and press it to our upper inner thigh. The modification here would be to press the foot into the calf or ankle. NEVER on the knee. From here find a spot to focus on, this will help you keep your balance. See if you can lift you hands over your head”



Tree with extended Leg

Instructions: from tree capture the big toe on right foot with right hand and extend leg forward, keep balance.

Attention Language: “Balancing from Tree pose we are going to extend the lift leg. Capture you big toe with the hand on the same side. Slowly extend your leg while keeping balance.”



Triangle

Instructions: from Warrior II hinge at the hips and lower upper body,

Modification: Bring feet closer

Attention Language: “From Warrior II we will straighten the front leg and hinge at the hips.

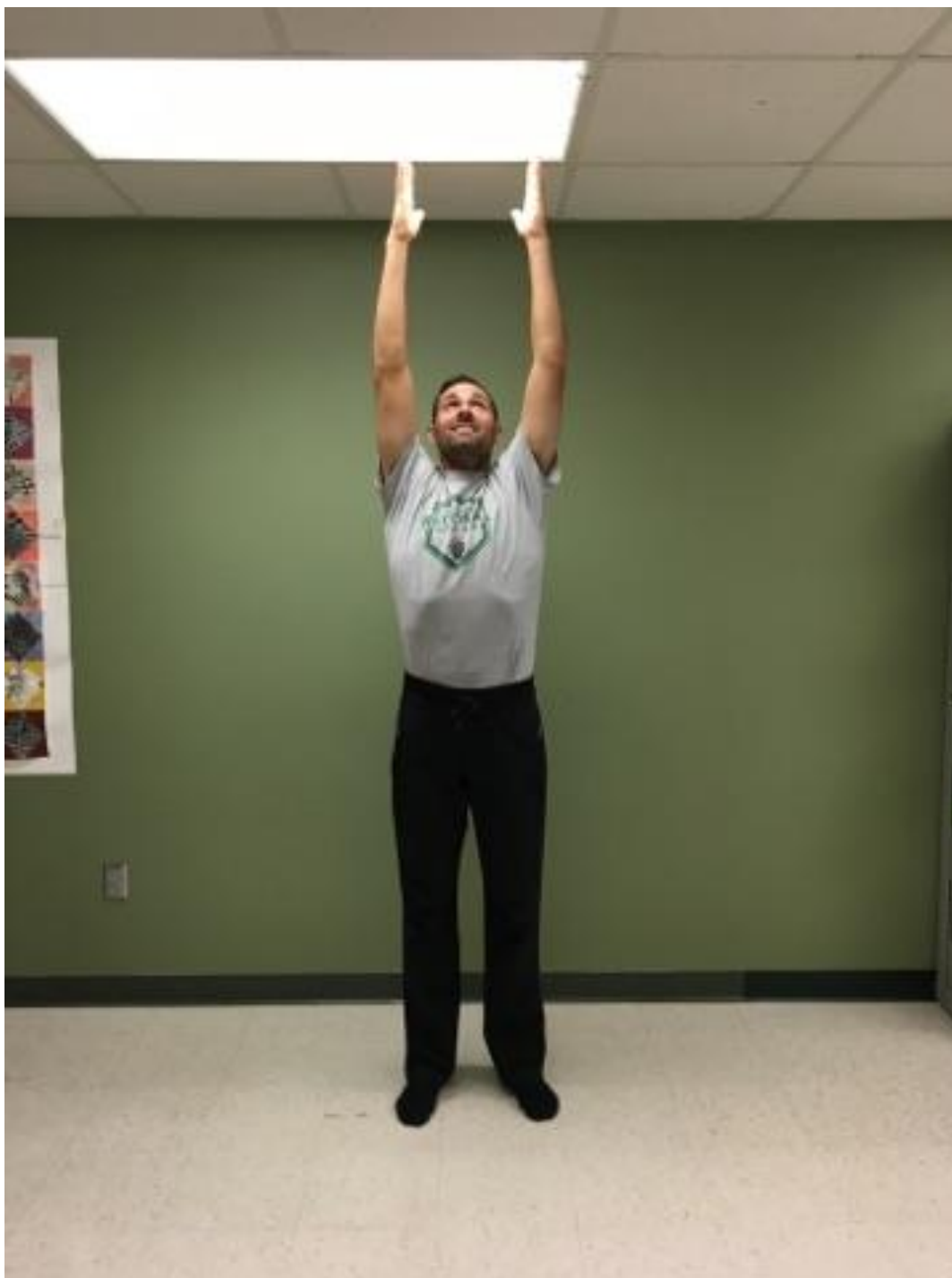
Feel the stretch in the front leg. NEVER pain.”



Up-dive

Instructions: Mt. pose inhale hands come wide and up over head palms together

Attention Language: “From mountain we will bring our arms around and up, meeting our palms together over our heads.”



Warrior I

Instructions: Hips Shoulders feet facing forward, one big step forward, even weight distribution on front and back feet, front foot flat, rear foot on toe, arms up palms facing each other, look forward.

Attention Language: “Getting to Warrior I we will go from Mt. and take a big step back, similar to a runner’s lunge but we do not sink into the front leg. Keep your feet, hips, and shoulders face forward and arms over head. Equal weight distribution between both feet.”



Warrior II

Instructions: From warrior I opens hips to side, drop rear heel and open, arms reach opposing forces, look forward

Attention Language: “From Warrior I we will get to Warrior II. Open your hips and drop your back heel. Stretch your arms, opposing forces. Equal weight distribution between both feet.”



Wide leg base

Instructions: feet wide apart toes forward

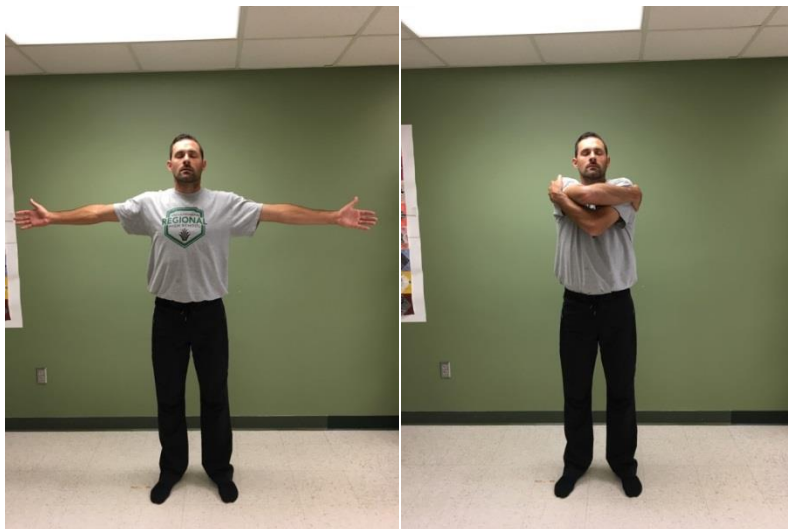
Attention Language: “We are going to a wide leg base here. Spread your feet wide and keep your toes pointing in forward or even a little bit inwards.”



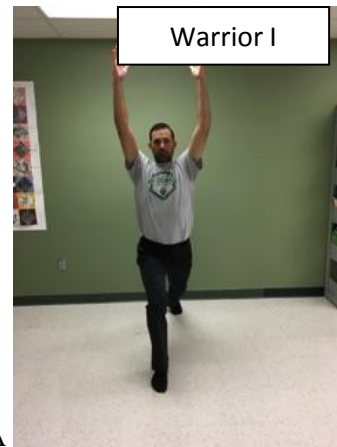
Wings

Instructions: expand and contract arms like wings

Attention Language: “Wings, reach your arms wide, opposing forces lengthen your arms and then wrap your arms around your body like a hug.”



Balance Routine – The balance routine mixes in Sun Salutations. So, when you see the words Sun Salutation, include it before moving to the pictured pose

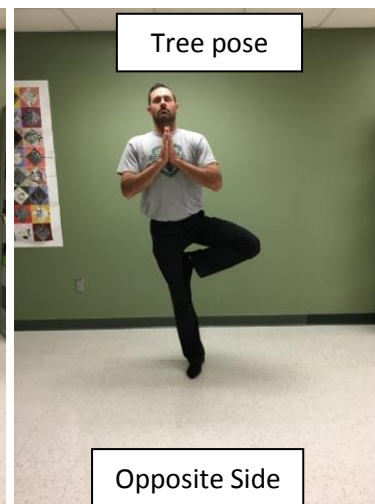
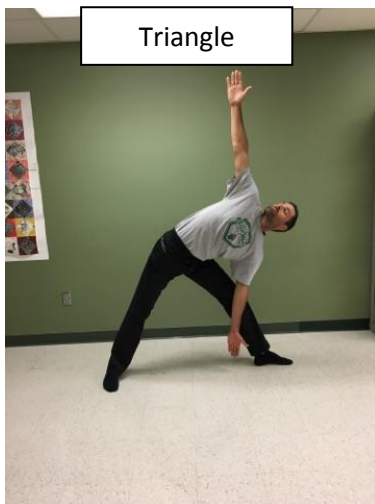


Sun Salutation A

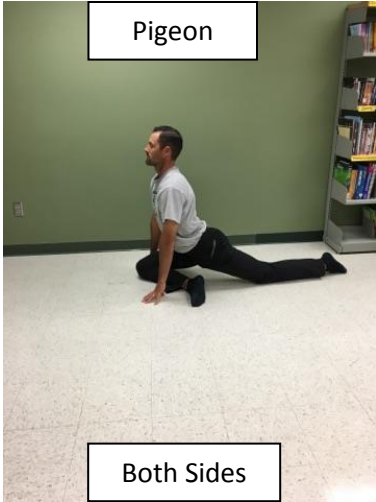
Sun Salutation A



Sun Salutation A

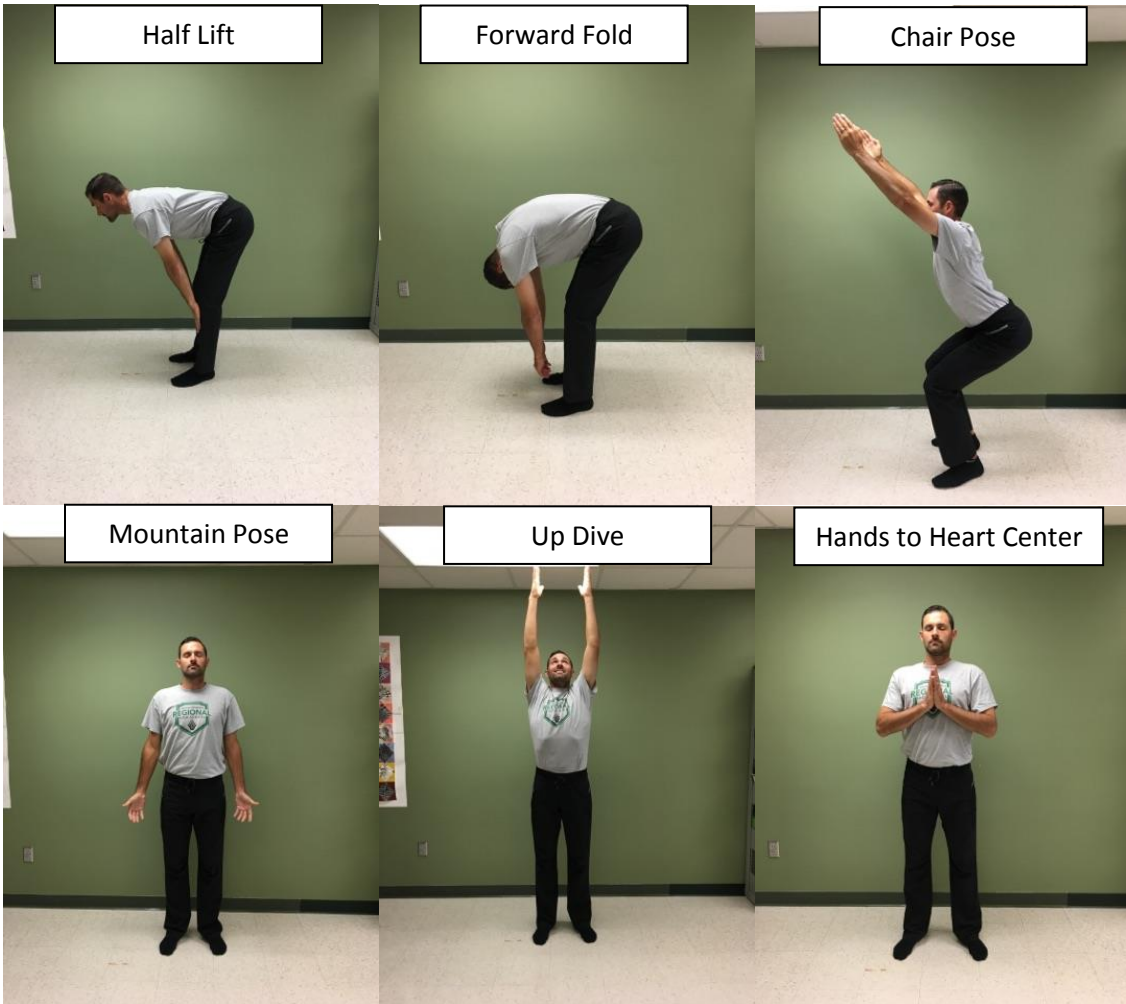


Repeat Both Sides, Sun Salutation A,



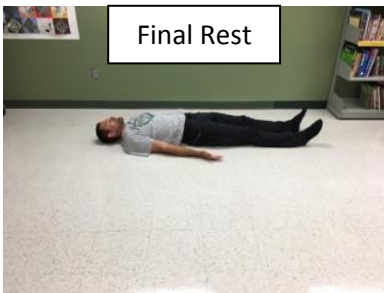
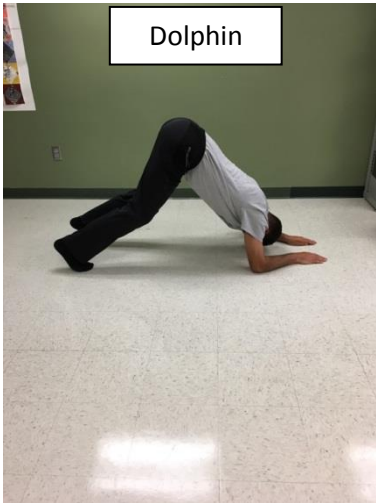
Chair Flow





Core Routine



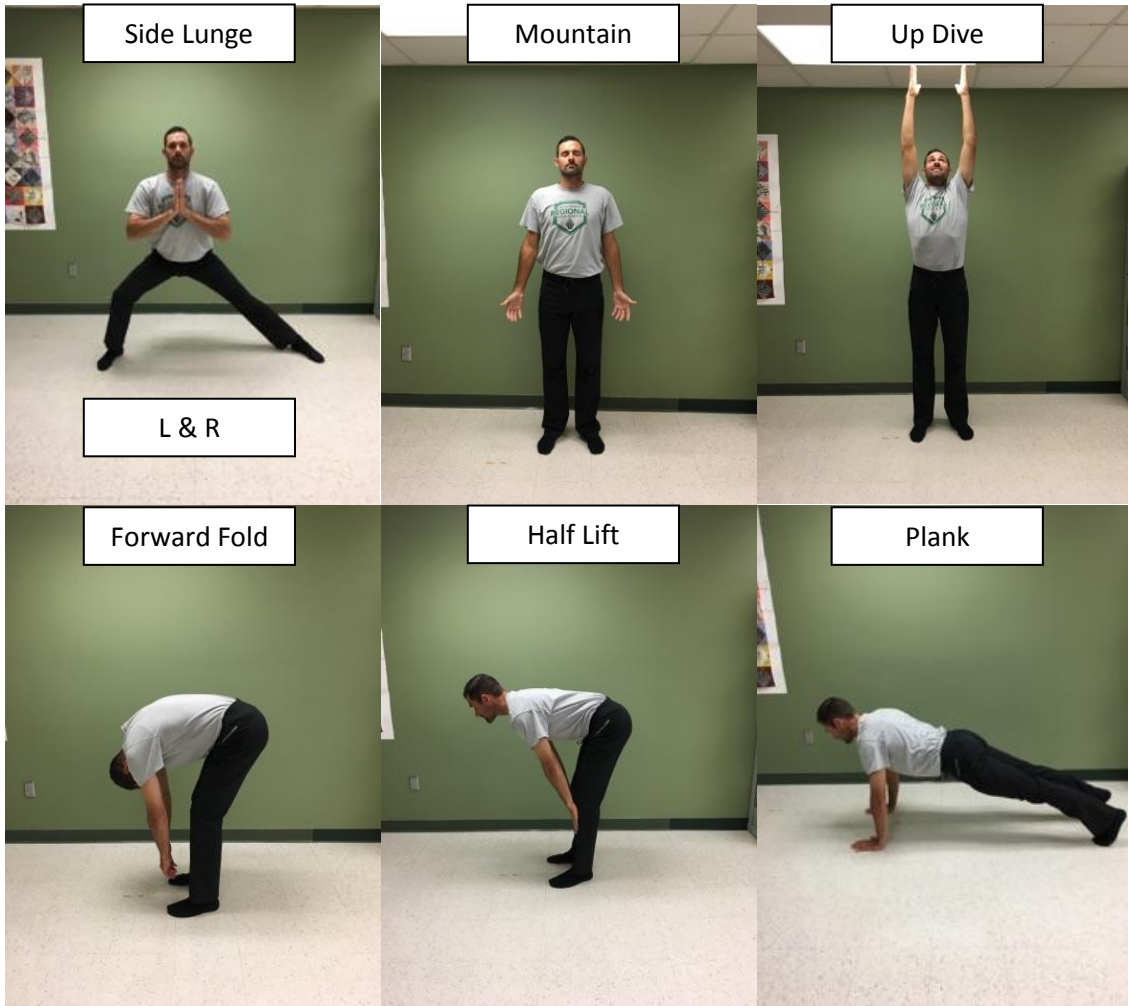


Dancing Warrior

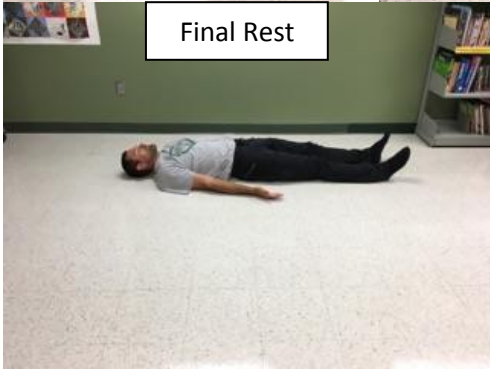
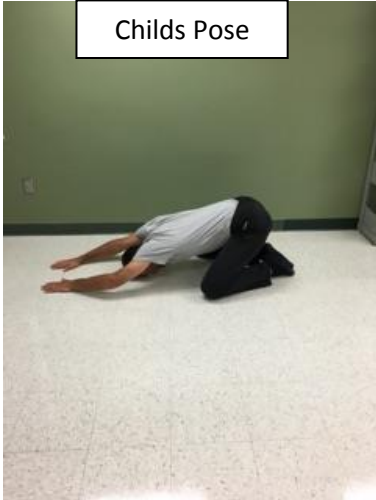




Flexibility Routine

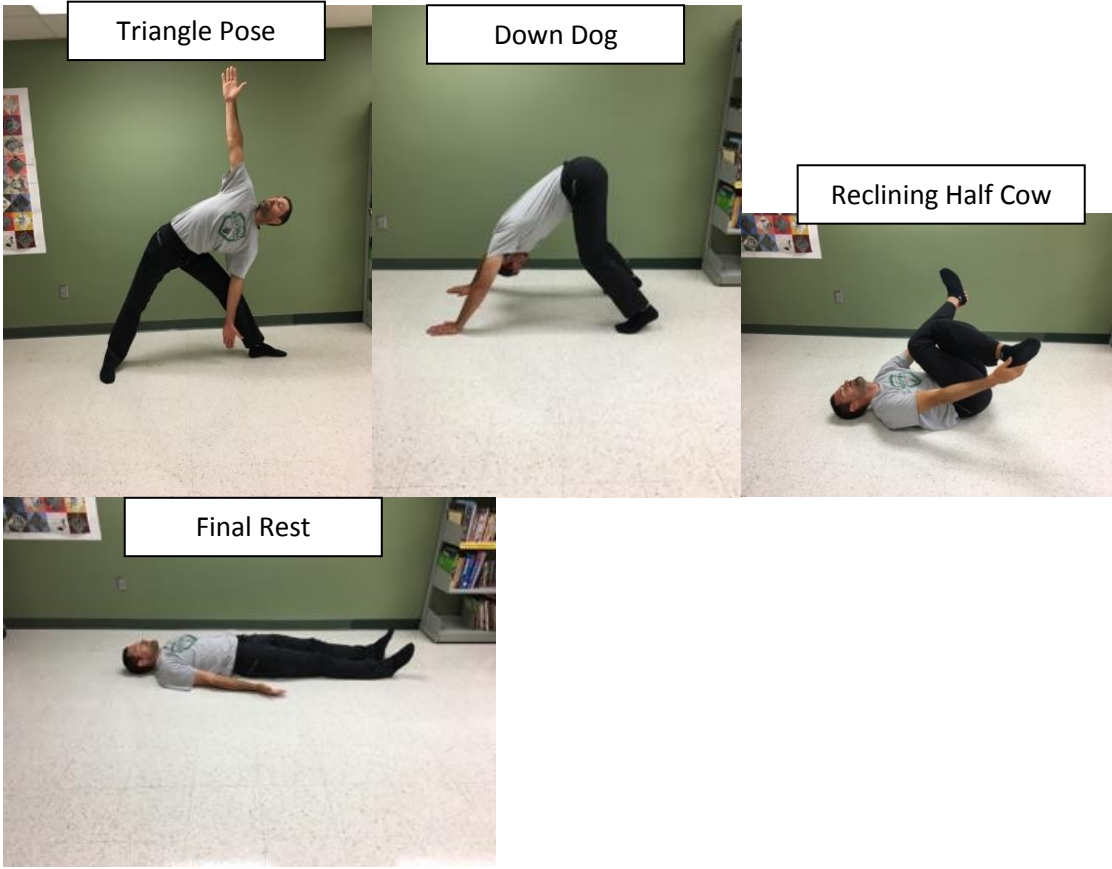




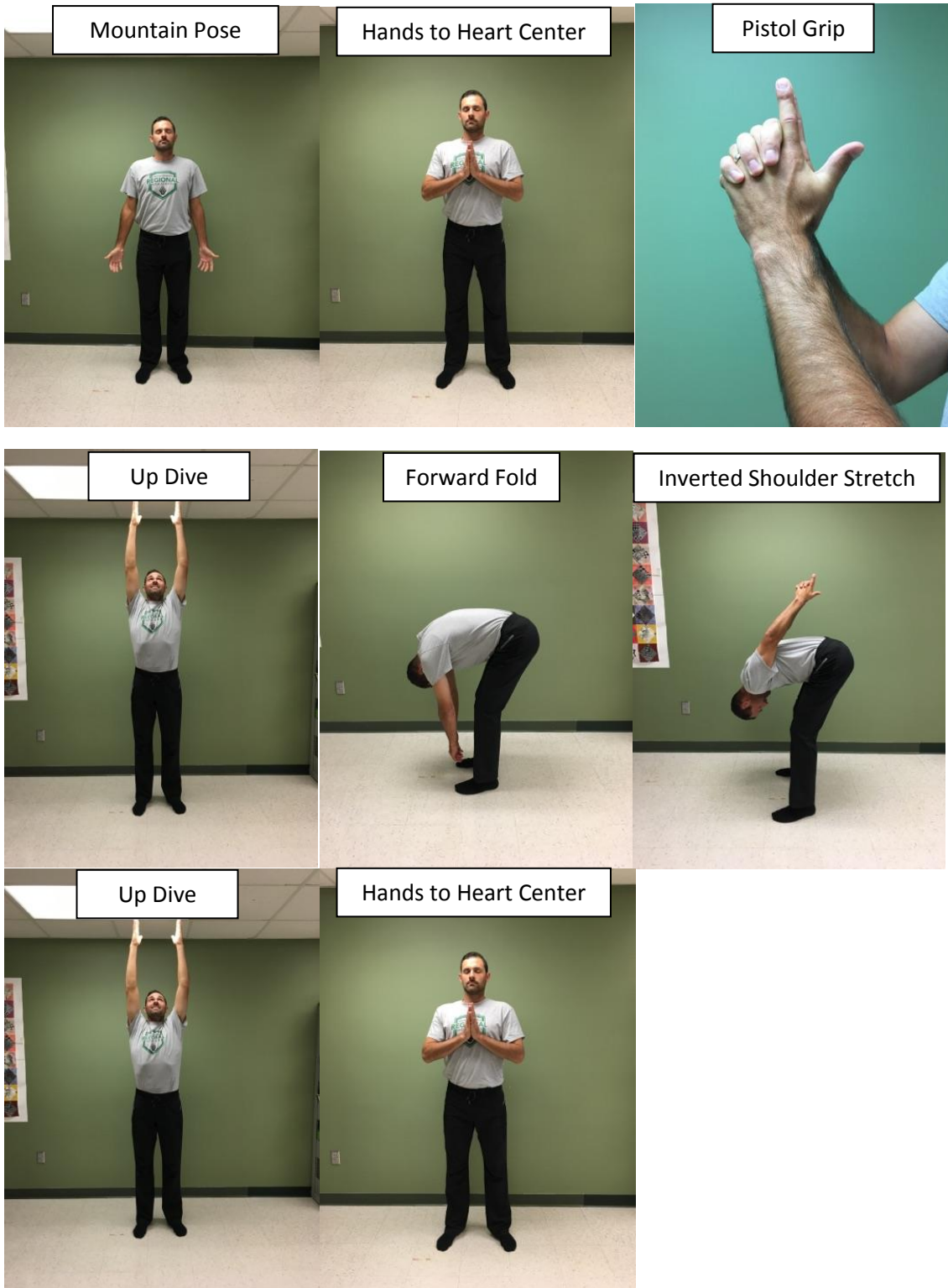


Half Moon Half Cow

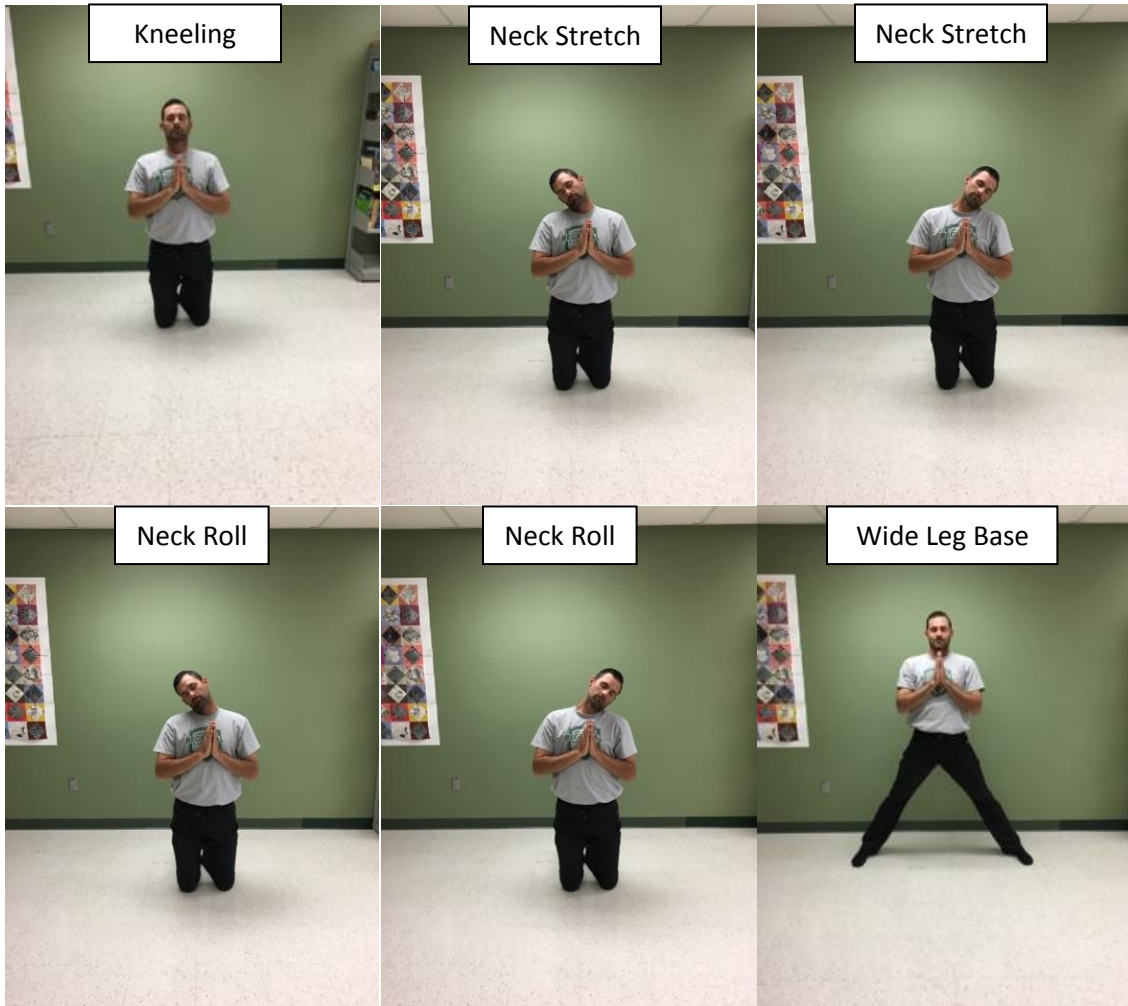




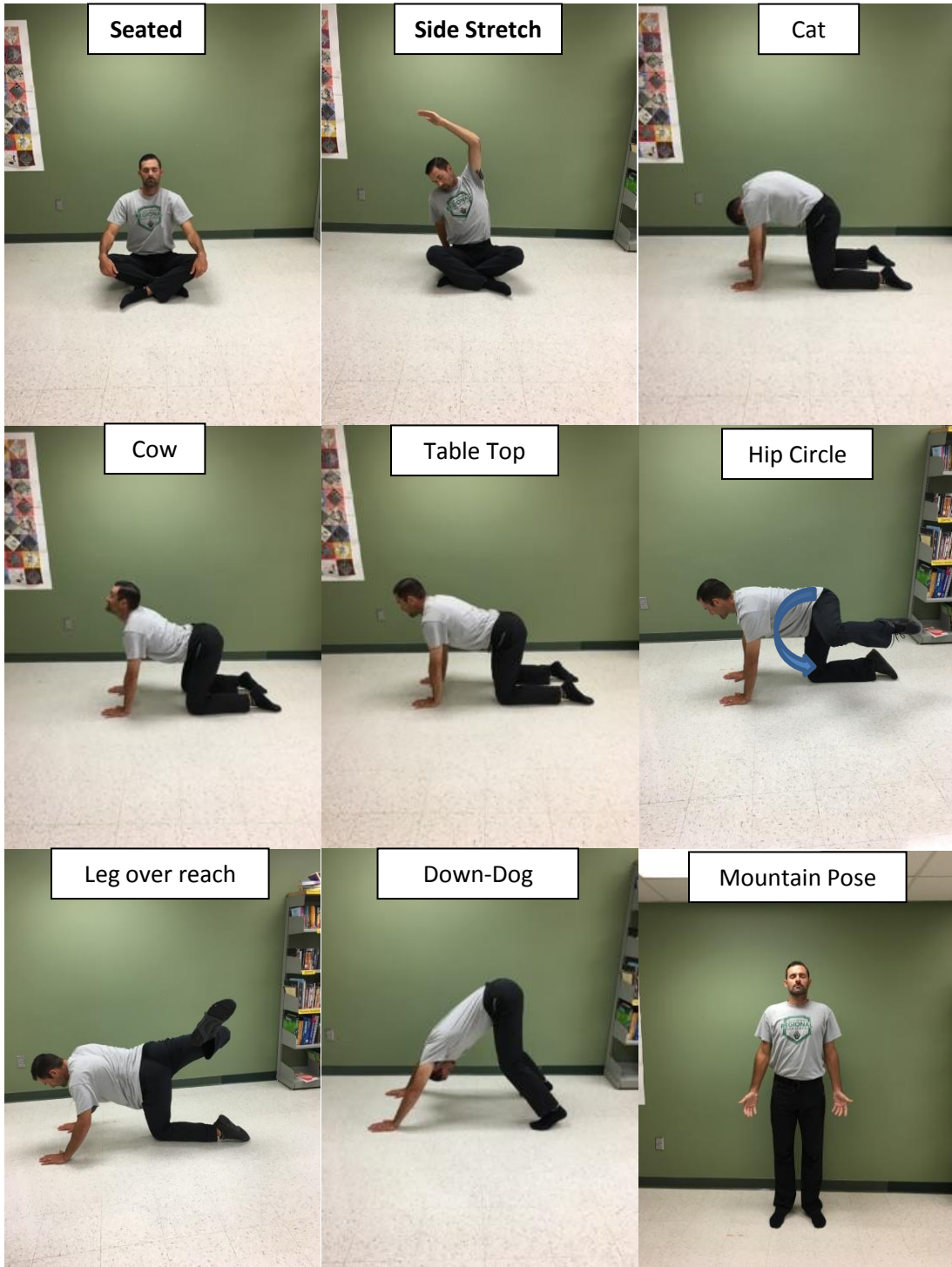
Intro A



Intro B



Intro C



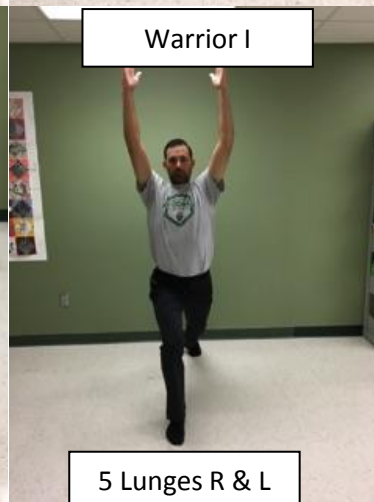
Power Routine



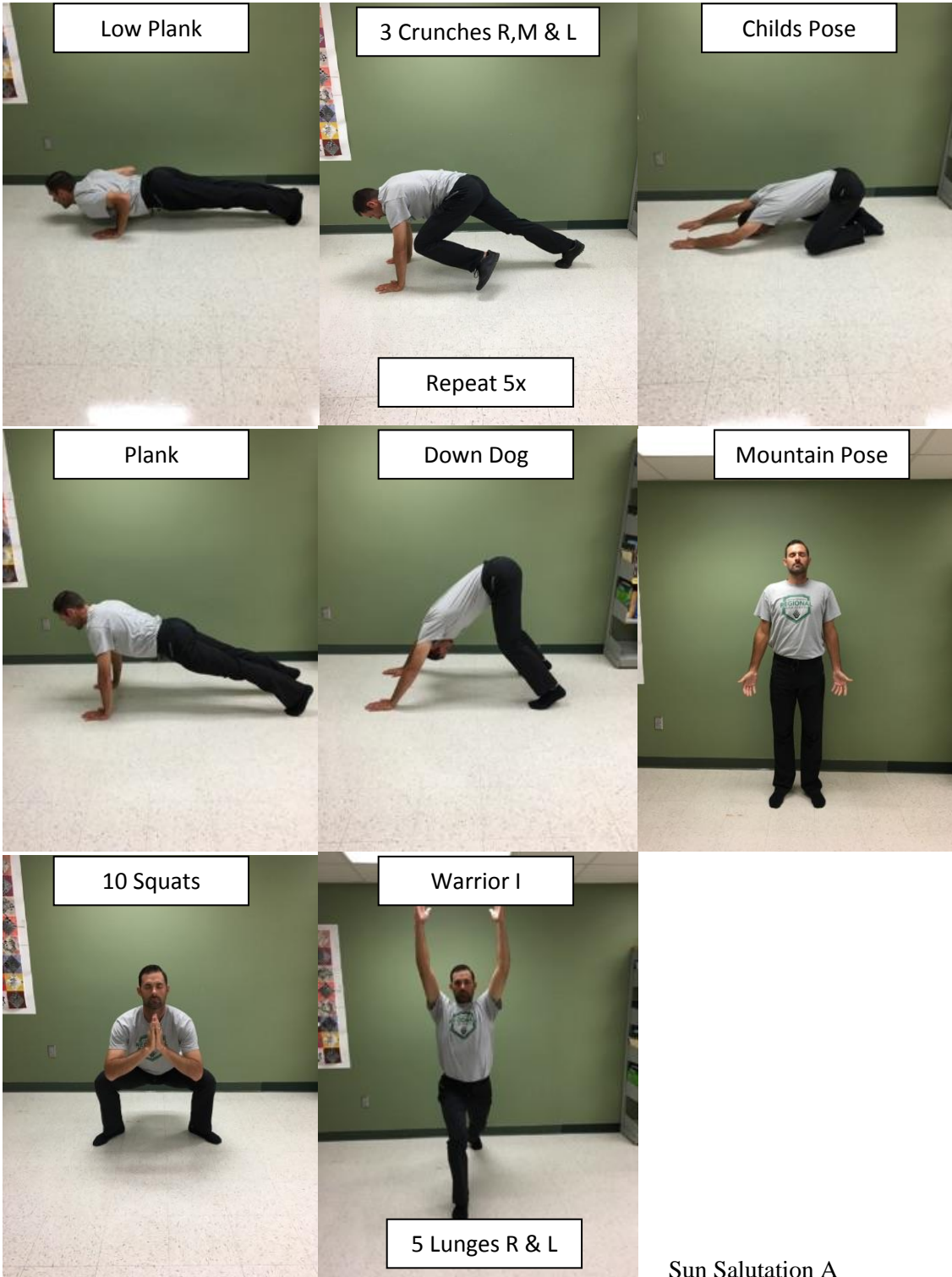
Sun Salutation A



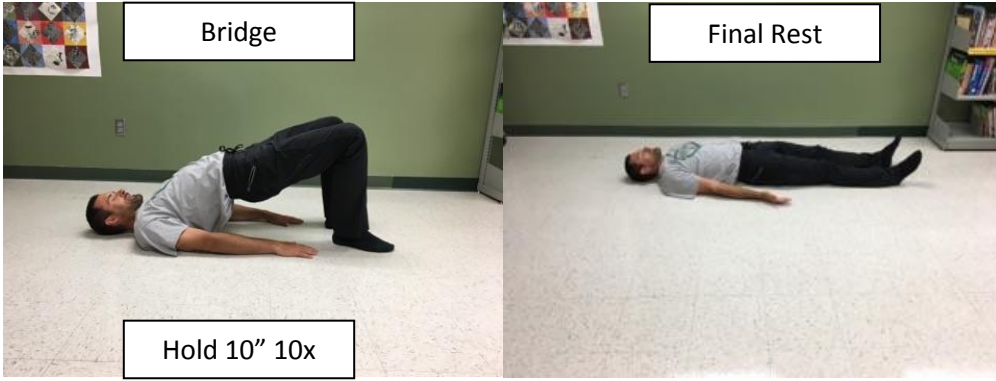
Sun Salutation A



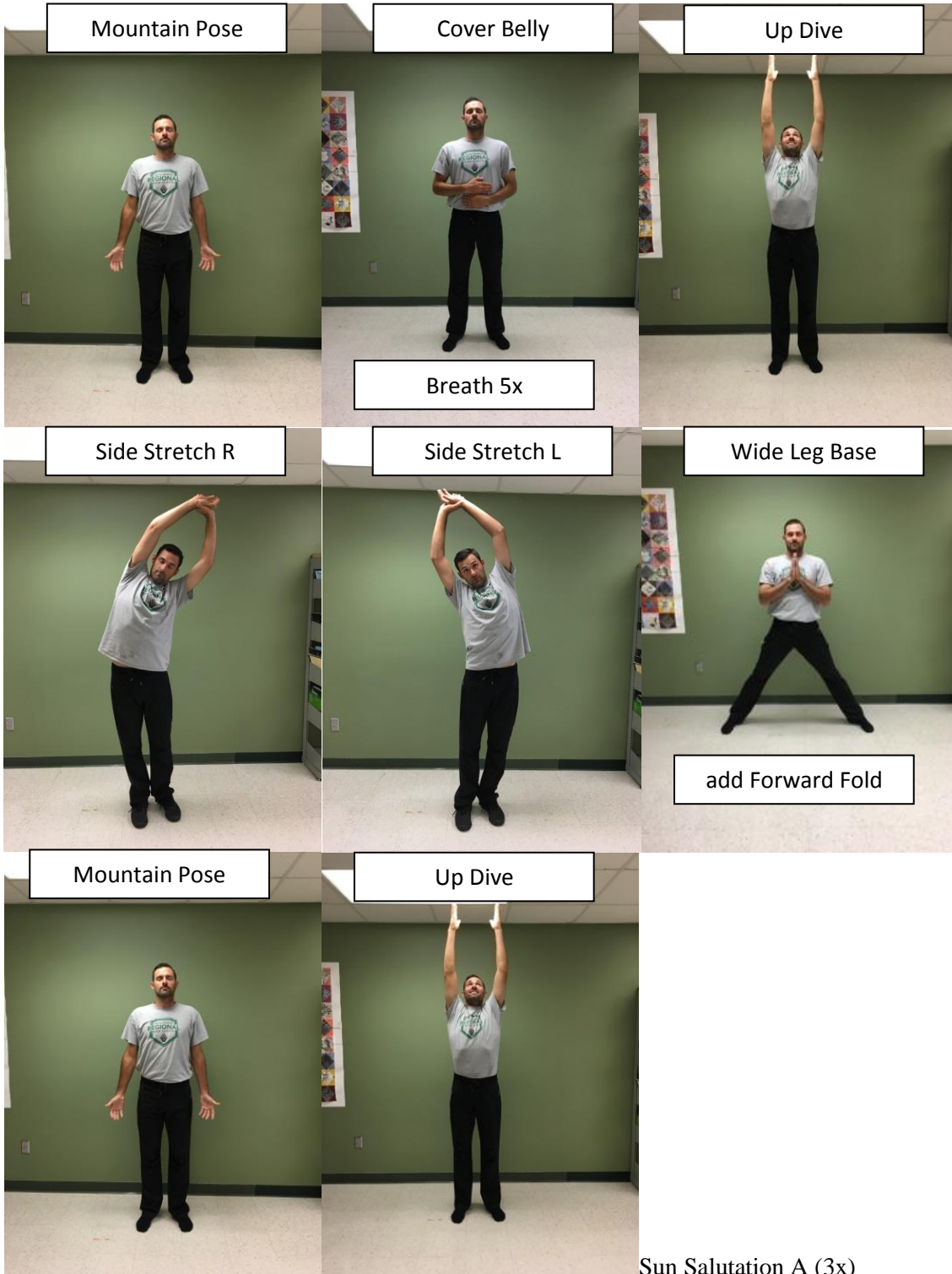
Sun Salutation A



Sun Salutation A



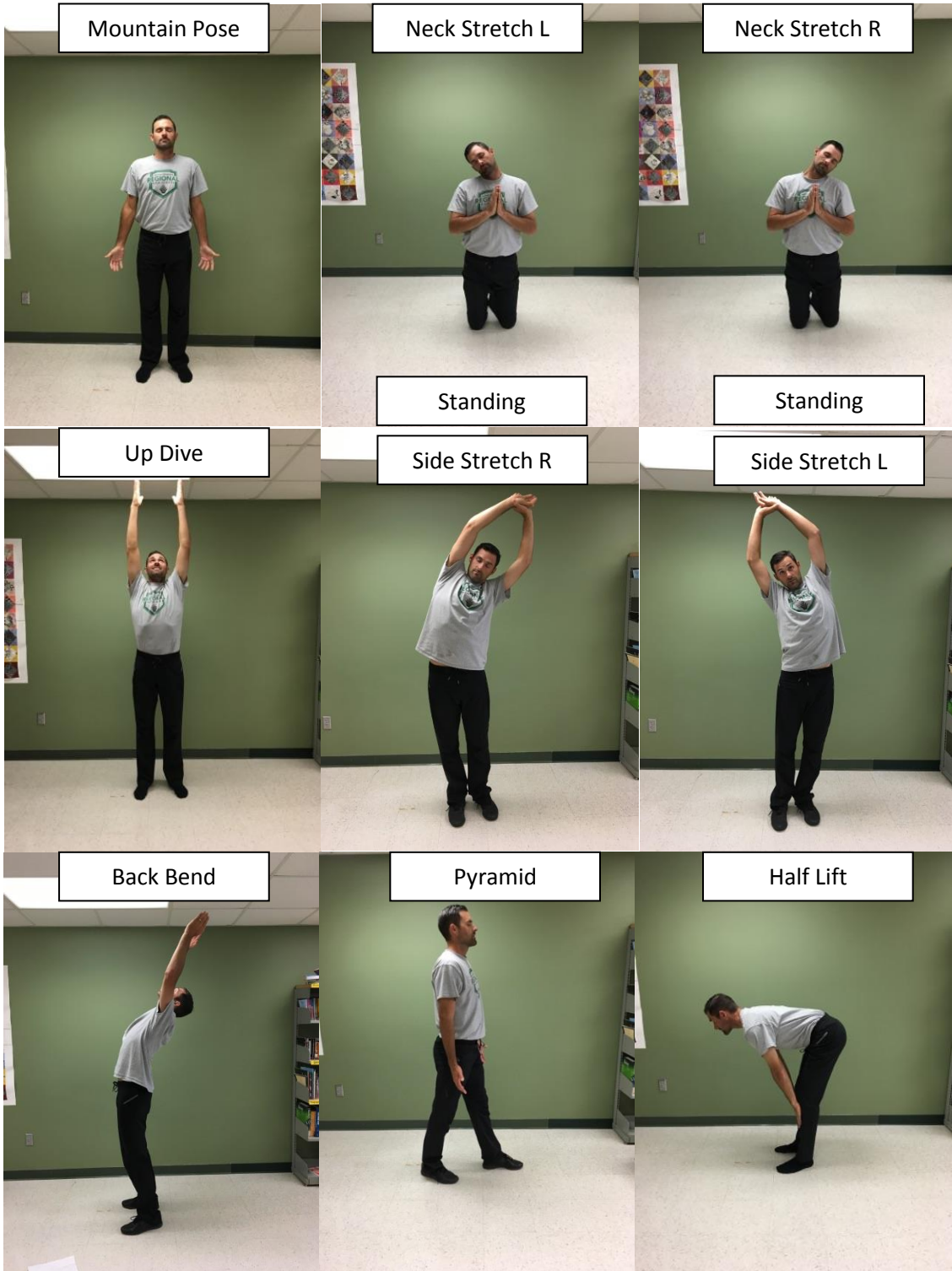
Relaxation Flow



Sun Salutation A (3x)



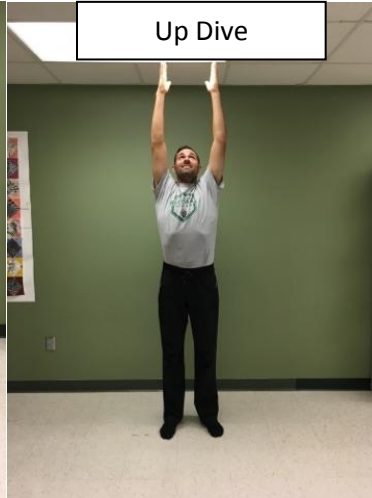
Running Recovery



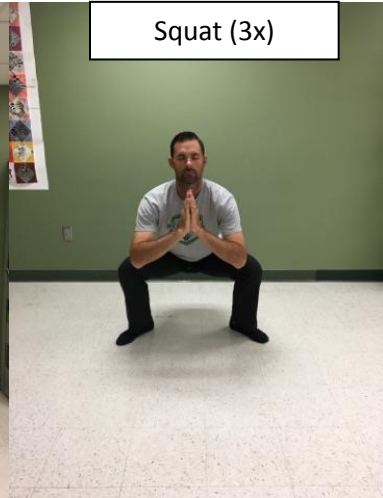
Forward Fold



Up Dive



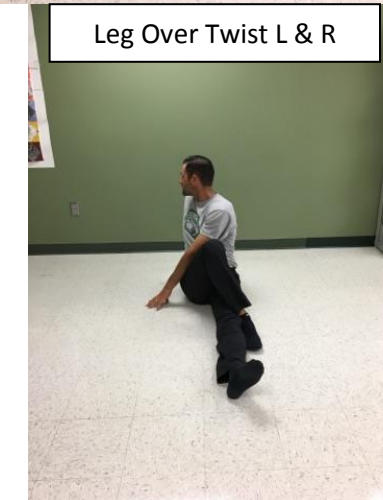
Squat (3x)



Inverted Shoulder Stretch

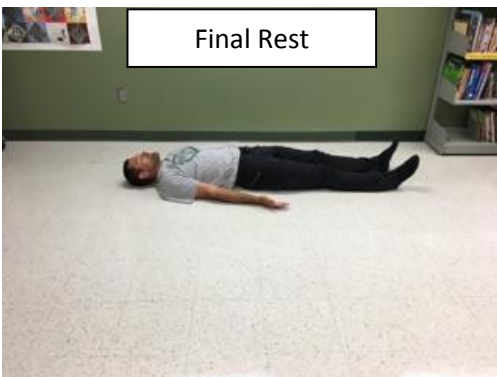


Leg Over Twist L & R

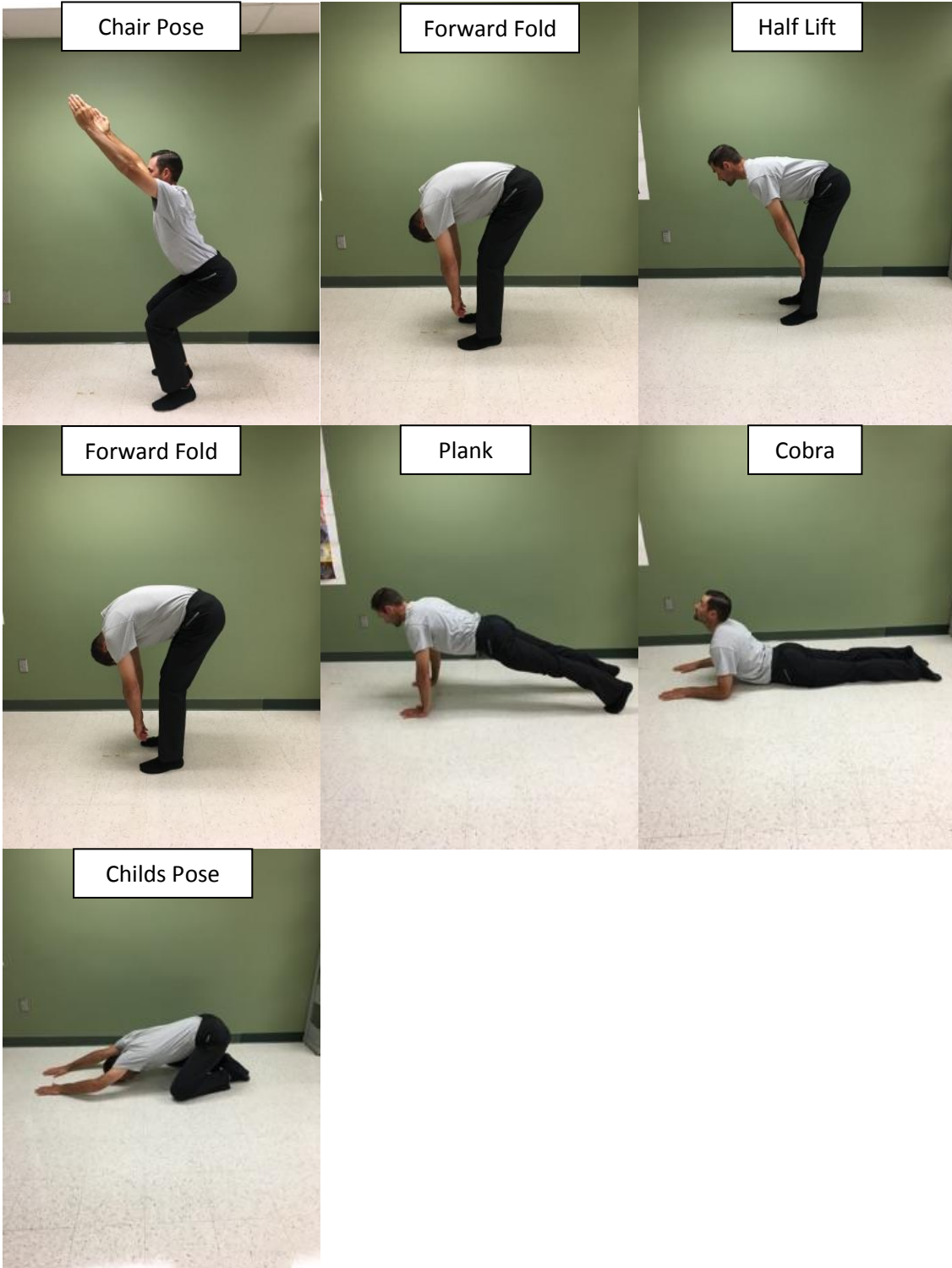


Sun Salutation B (3x)

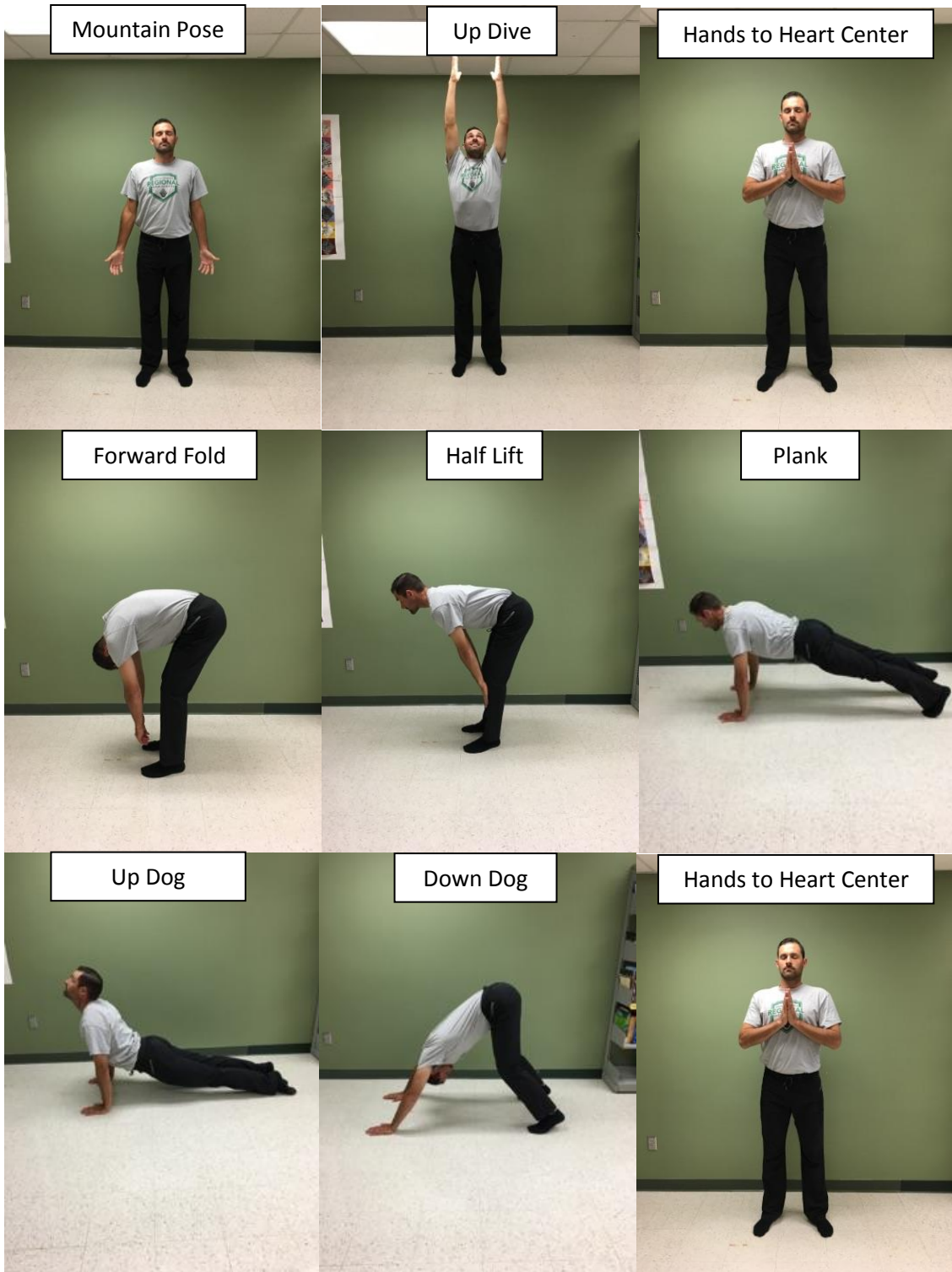
Final Rest



Sun Salutation A



Sun Salutation B



Yoga Activities Rubric

Yoga Rubric	Exceeds Proficiency	Meets Proficiency	Need Improvement
Balance	The student can complete the routine without losing balance.	The student can complete most of the routine without losing balance.	The student does not have the balance to complete most of the routine.
Core Strength	The student has enough core strength to fully complete all poses in a routine.	The student has some core strength, needs to improve, but can complete most of the routine.	The student does not have enough core strength to complete the full routine.
Lower Body Strength	The student has enough lower body strength to fully complete all poses in a routine.	The student has some lower body strength, needs to improve, but can complete most of the routine.	The student does not have enough lower body strength to complete the full routine.
Upper Body Strength	The student has enough upper body strength to fully complete all poses in a routine.	The student has some upper body strength, needs to improve, but can complete most of the routine.	The student does not have enough upper body strength to complete the full routine.

		the routine.	
Knowledge of Poses	The student can perform every, or most, of the poses in a routine and can name them.	The student can either name all the poses or know how to perform all the poses of a routine.	The student cannot name or perform the poses of a routine.
Breath	The student is able to link all their movements with breath and can use diaphragmatic breathing when prompted.	The student is able to either link all their movements with breath or can use diaphragmatic breathing when prompted.	The student cannot link breath with poses and cannot use diaphragmatic breathing when prompted.
Focus	The student has the ability to stay focused for the entire routine.	The student remains focused for most of the routine.	The student is not able to stay focused for half the routine.

APPENDIX C

Breathing Activities and Rubrics

Diaphragmatic Breathing

Instructions: Students will expand their diaphragm when they inhale and contract the diaphragm when they exhale.

Purpose: Belly breathing offers calm and focusing effects. Diaphragmatic breathing helps become aware of the breathing pattern, breathing through the nose, relaxes abdominal muscles for calming effect, and slows breathing rate for calming effect.



Rubric for Breathing Skills

Diaphragmatic Breathing	Exceeds Proficiency	Meets Proficiency	Need Improvement
Belly vs. Chest	The belly is expanding on inhales and contracting on	The student can either only expand on inhale or contract on exhale.	The student is not able to control their diaphragm during breathing.

	exhales.		
Nose	The student can breathe in and out through their nose.	The student is breathing in through their nose.	The student is not able to take breathes in or out through their nose.
Control	The student has the ability to change the rhythm of their breathing on command.	The student has control over how long their breath can last.	The student is not able to control the duration of breaths.

Nostril Breathing

Instructions: Students will cover their right nostril with their right thumb as they take a deep inhale and exhale. On the next inhale the student will cover their left nostril with their pinkie finger for a deep inhale and exhale. Repeat 5 times each side.

Purpose: The purpose of nostril breathing is to warm and moisten the air for the lungs, control the breathing rate for prolonged inhale and exhale.



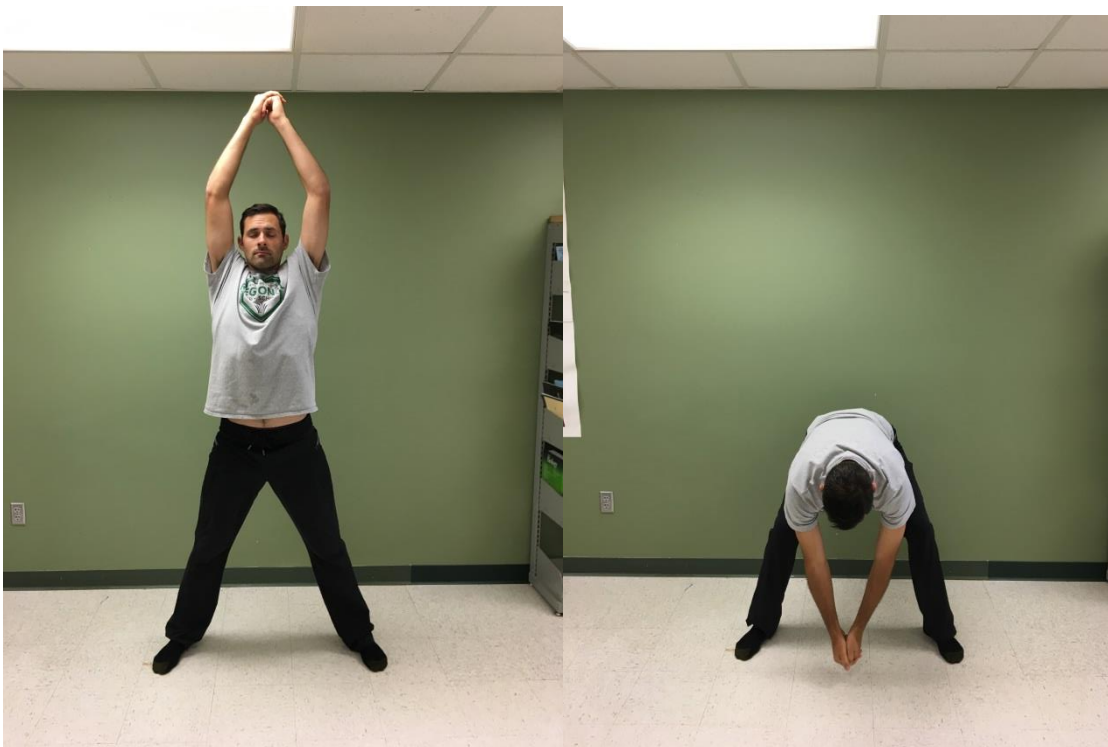
Nostril Breathing	Exceeds Proficiency	Meets Proficiency	Need Improvement
Nose	The student is able to control their breathing through nose for the entire exercise	The student is able to breathe through their nose for about half of the exercise.	The student cannot control their breath through their nose.
Fingers	The student is able to control their nostril air flow by using pinkie and thumb in perfect timing and rhythm.	The student is able to use both pinkie finger and thumb when covering nostrils.	The student is not able to control which digits they use to cover their nostrils.

Diaphragm	The student is able to control their diaphragm through the entire exercise.	The student is able to control their diaphragm about half the time.	The student is not able to control their diaphragm during exercise
------------------	---	---	--

Explosive Breath

Instructions: Take a wide leg base and raise your arms as you take a deep inhale. On the exhale loudly let out the air and throw the arms down in a chopping motion.

Purpose: The purpose of this exercise is anti-anxiety. The loud exhale allows the student to “Let it out”.



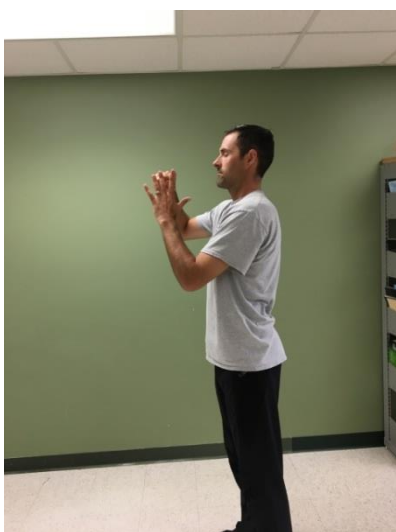
Explosive Breathing	Exceeds Proficiency	Meets Proficiency	Need Improvement
----------------------------	----------------------------	--------------------------	-------------------------

Inhale	The student is able to inhale and raise arms up during phase one.	Student is able to either lift arms or inhale during first phase.	The student is not able to inhale or raise arms during phase one.
Exhale	The student is able to explode arms down and exhale during second phase.	Student is either able to explode arms down or exhale during second phase.	The student is not able to explode arms down or exhale during second phase.

Five Finger Breathing

Instructions: Have the students extend all fingers and thumb on one hand. As they inhale have them trace up their thumb, slowly to control breath, and back down the thumb as they exhale. Continue for the rest of the fingers and repeat as necessary.

Purpose: The purpose of five finger breathing is to have visual feedback on the rate of their breathing.



Five Finger Breathing	Exceeds Proficiency	Meets Proficiency	Need Improvement
Nose	The student is able to control their breathing through nose for the entire exercise	The student is able to breathe through their nose for about half of the exercise.	The student cannot control their breath through their nose.
Hand/Fingers	The student is able to extend all five	The student either able to extend all	The student does have coordination of

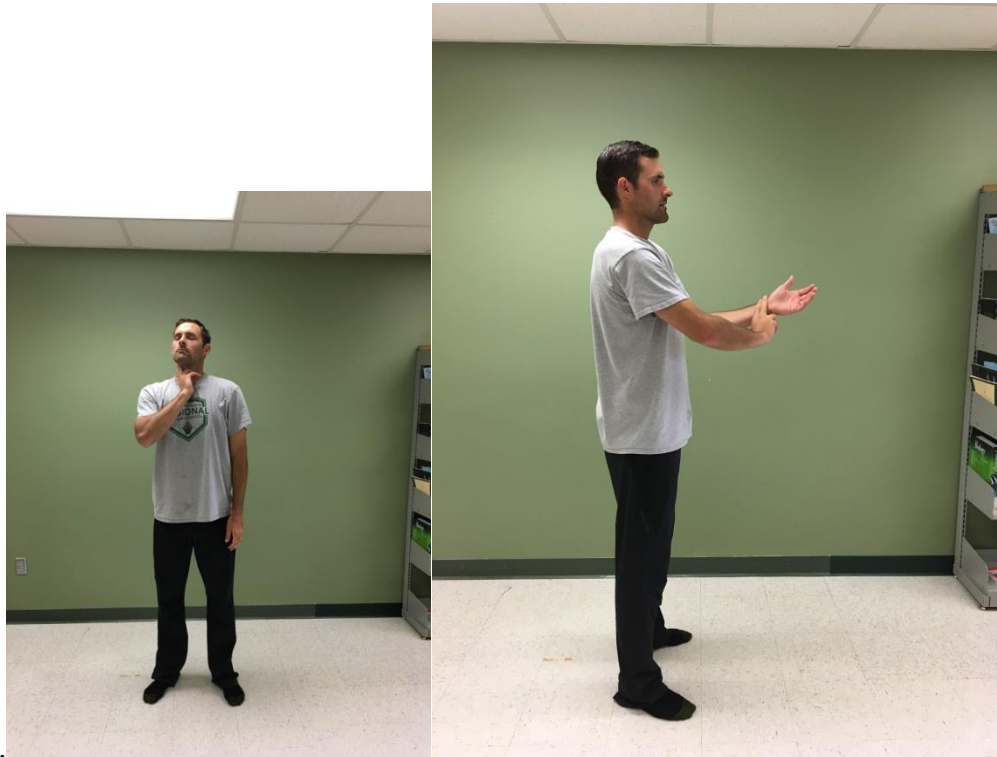
	fingers on one hand and is able to trace their fingers in coordination with their breath.	fingers on one hand and trace the finger but the timing of the breath is not coordinated.	finger tracing and rhythm of breath.
Control	The student is able to control their breathing for the entire exercise	The student is able to control the rate of their breathing about half the time.	The student is not able to control breathing.
Diaphragm	The student is able to control their diaphragm through the entire exercise.	The student is able to control their diaphragm about half the time.	The student is not able to control their diaphragm during exercise

Pulse Count Activity

Instructions: Have students do jumping jacks for one minute and then have them count their pulse for one minute. Have students write down or remember their heart rate. Then have them do jumping jacks for another minute. Then have student's use diaphragmatic breathing as they count their pulse for another minute. The pulse count should be lower.

Purpose: The purpose of this activity is to demonstrate that diaphragmatic breathing can slow down heart rate in times of high stress like jumping jacks, testing, relationships,

driving, etc.



Pulse Count	Exceeds Proficiency	Meets Proficiency	Need Improvement
Activity			
Heart Rate	The student is able to detect their pulse on both of their carotid artery and radial artery.	The student is able to detect their pulse on either their carotid artery or radial artery.	The student is not able detect a pulse on either arteries.
Diaphragm	The student is able to control their diaphragm through	The student is able to control their diaphragm about	The student is not able to control their diaphragm during

	the entire exercise.	half the time.	exercise
Lower Hear Rate	The student is able to lower their heart rate during this activity	The student can lower heart rate half the time during the activity.	The student is not able to lower their hear rate during the activity.

APPENDIX D

Mindful Activities

This lesson plan has been created to offer teacher multiple mindfulness exercises for their class room.

Body Scan – Have the students lie down on their backs on ground or put their head down on their desk. The purpose of the body scan is to bring attention to areas of the body that might be tense or holding stress. We bring our attention to one spot and then learn to release any energy that was bound in that spot. Read the following script.

“Bring your attention to you your toes. Wiggle your toes, squeeze your toes, and spread your toes apart. Now let you toes rest completely.”

“Now bring your attention to your feet. Can you contract just your feet? Can you move your feet from side to side, front and back? Let your feet relax, go limp.”

“Bring your attention to your calves. Can you flex them both? Flex them in alternating patterns. Now let your calf relax.”

“Take your attention to your knees. Flex your knee cap three times, then let them relax.”

“Flex your quadriceps. Squeeze them very tightly, now let them go limp.”

“Bring your focus to your glute’s. Can you squeeze both sides? Can you squeeze just one side, now the other? Squeeze both of your glutes at the same time as hard as you can. Now relax those muscles.”

“Focus on your abdominal muscles now. Squeeze your abs tightly and hold, after five seconds release your abs and take a deep breath in. Keep breathing throughout the remainder of the exercise.”

“Now, bring your attention to your pectorals and shoulders. Squeeze your chest together, and relax. Scrunch your shoulders up tightly, and relax. Squeeze both the chest and shoulders at the same time, and relax.”

“Finally, bring your focus to your face. Scrunch your lips, ears, eyebrows, eyes, nose, and forehead as tightly as possible and hold. Let your face relax.”

“As you lay hear completely relaxed only focus on your breathing. Let your belly rise and fall as you inhale and exhale. Let this be the most relaxing time of your day (Continue as long as necessary).

Gratitude Activity

This activity requires students to list things they are grateful for. Pick a topic, or more, from the list and have students list five things they are grateful for. The purpose of this activity is to bring attention to the positive in life instead of focusing on only the negative.

Topics – Home, Family, School, Friends, Work, Sports, Relationships, etc.

Mindfulness of Nature, Visualization

This activity is has also been called the five minute vacation. Students will be prompted to visualize one of their favorite outdoor places. Student need to be prompted to use their mind to create the sights, sounds, and feel of a certain place. Entice students

describe what they see by asking them about colors, texture, distance, light, sounds, smells, water, trees, animals, people etc.

To begin the activity, have the lights in the room off and cut off any sounds that you have control off. Begin by having students, either seated or lying down, focus on their breath by taking slow and deep diaphragmatic breaths. Then ask them about a place they like that is outdoors. Begin asking them about their vision using the prompts. Let this activity persist for about 5 minutes, remind students that are not focused to remain silent. At the culmination of the activity let students who are willing to, share their visualization by recalling everything they were able to include in their visual. Students who struggle with this activity may need more practice or guidance when beginning nature visualization. Follow up as necessary.

Mindful Listening

For this activity the teacher will need to obtain three objects that safe to be thrown around the class i.e. ball, notebook, snack container, stick, etc. and a blindfold.

To begin this activity the teacher will have the students sit in a circle. Then have the students focus on their diaphragmatic breathing. Explain the activity as a way to be mindful of our environment and the sounds. Have the students throw the objects to each other and remind the students to be mindful of the sounds they make as they fly through the air. Then randomly select a student to be blindfolded. The blindfolded students then needs to try and identify which object is being tossed threw the air by using mindful listening skills. Give the blindfolded student a chance identify each object. Continue the activity with other students and introduce new objects when possible.

The object of the game is to ignore all distractions and focus on the task at hand. This skill relates back to real life situations when communication is crucial.

Simon Say's

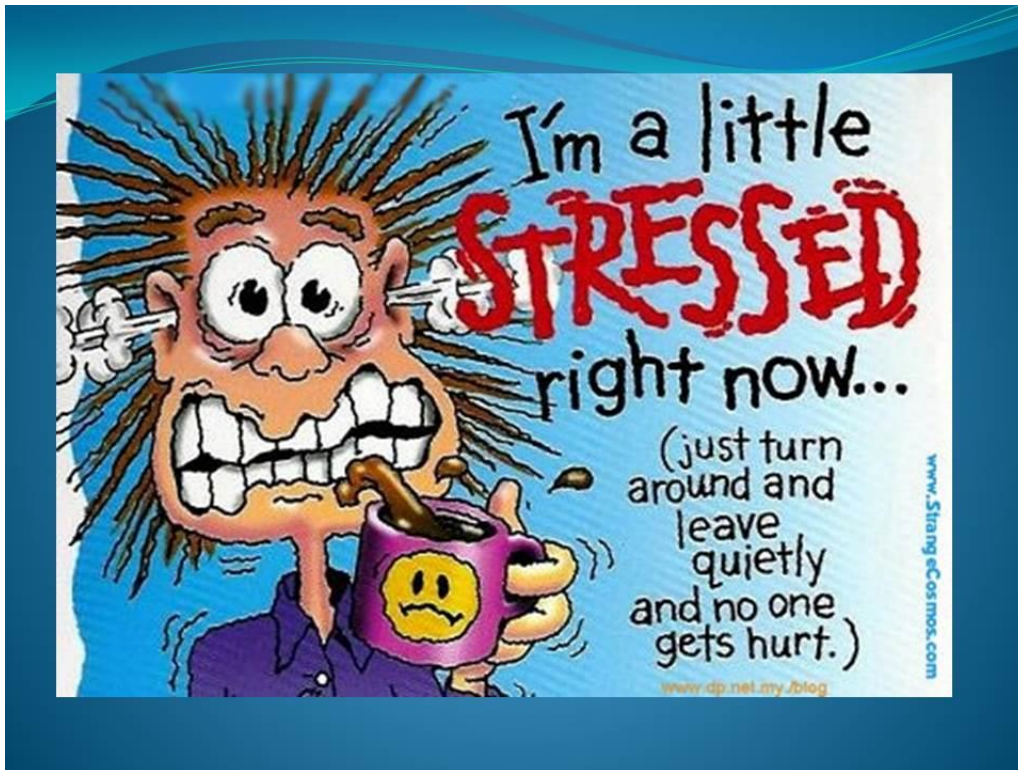
This is a classic game of Simon Say's. First lead the class in an example round. Then let the students lead the activity if they can. The purpose of this activity is to bring attention to the mindlessness vs. mindfulness. A simple game of Simon says evokes the ability to listen mindfully to the task at hand.

Intuition

Listening to our instincts takes mindfulness. In a large group ask students if they now what intuition is and how they know it. Ask them about times when they have had "gut feelings" what that meant for their decision making process. Did you go with you intuition or against? Was it the right call or not? How did you know your intuition was telling you something? Continue with the discussion while sharing stories about intuition and the ability to be able to listen to your instincts with mindful intention.

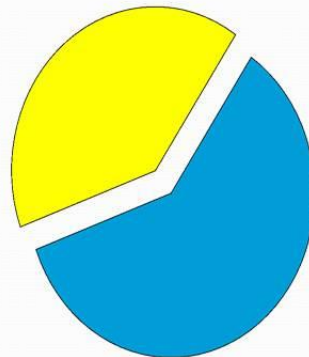
APPENDIX E

Stress PowerPoint



40% !!!!!!!

- of All Teenagers say they experience mild or severe stress in their life.



Definitions:

- **Stress:** Your mind and body's response or reaction to a real or imagined threat, event or change



Stressor:

- The threat, event or change which can be internal (thoughts, beliefs, attitudes) or external (loss, tragedy, change).
 - ~ grades
 - ~ homework
 - ~ teachers
 - ~ parents
 - ~ future plans
 - ~ money
 - ~ looks
 - ~ tests
 - ~ dating
 - ~ friends/peers

Distress

- Negative stress that occurs when your level of stress is either too high or too low and your body and/or mind begin to respond ***negatively*** to the stressors. (difficult work environment, overwhelming sights or sounds, etc.)



Eustress

- Good Stress
 - New significant other
 - New Job
 - New sibling
 - New car!



STRESS RESPONSE

- The response to a demand or stressor. Also called the FIGHT or FLIGHT.



Three Phases: alarm, resistance, recovery or exhaustion

ALARM STAGE

As you begin to experience a stressful event or perceive something to be stressful, physiological changes occur in your body. This experience or perception disrupts your body's normal balance and immediately your body begins to respond to the stressor(s) as effectively as possible.



EXAMPLES

- Cardiac - heart rate increases
- Respiratory - increased respiration
- Skin - decreased temperature
- Hormonal - increased stimulation of adrenal genes which produce an adrenal rush.

RESISTANCE STAGE

We may feel too much tension. Reactions are overreacted, overdone, excessive. People may smoke too much, drink more coffee, or drink more alcohol, use drugs, feel driven, pressured, tired and bad.

Usual reaction is anxiety, memory loss, overreacting (rude, worries) or depression.

Organism (mind-body occurs) are very vulnerable and can get sick very easy (weak immune system).



RESISTANCE STAGE

MORE EXAMPLES:

Emotional indicators include:

- tearfulness
- fear
- anxiety
- panic
- guilt
- **agitation**
- depression
- overwhelmed.

EXHAUSTION STAGE

During this stage the stressor is not being managed *effectively* and the body and mind are not able to repair the damage.



EXAMPLES

Digestive disorders, withdrawal, headaches, tension, insomnia, loss of temper.



Relaxation Techniques

- IMAGERY



Relaxation Techniques 3-2-1

Relax

- 3 “I See.....”
- 3 “I Hear....”
- 3 “I Feel.....”
- 2 “I See.....”
- 2 “I Hear....”
- 2 “I Feel.....”
- 1 “I See.....”
- 1 “I Hear....”
- 1 “I Feel.....”

Muscle Relaxation

- Body Scan
- Yoga
- Massage
- Stretch
- Warm Water



Strategies to Manage Stress in Your Life

- | | |
|--|--|
| <ul style="list-style-type: none"> • Simplify Your Life • Ask for help • Practice Time Management • Minimize Alcohol Use • Humor--Take Time to Play • Mindfulness • Get Counseling If Needed • Color or draw | <ul style="list-style-type: none"> • Exercise daily • Eat healthy • Get enough sleep • Cultivate high self esteem • Release tension by crying, laughing, relaxing, etc. • Identify stressors you can control & take action • Music journal read |
|--|--|

APPENDIX F

Small Group Yoga Routine and Rubric

Small Group Moving and Learning Routine

Names:

For this assignment you will be assigned groups of 3-5 people. Your group is to create and original Moving and Learning routine to present to the class.

Mindfulness: The Moving and Learning routine needs to have an initial intention (i.e. energy, calm, focus, etc.).

Yoga: You will need to incorporate a minimum of 10 postures with a maximum of 15 postures. The postures need to link together with breath.

Breath: Breathing that links to the yoga flow needs to be present. The Moving and Learning routine must finish with a mindful breathing practice.

Small Group Moving and Learning Rubric

	Exceeds Proficiency	Meets Proficiency	Need Improvement
Mindfulness	The small group initiated the routine with mindful intention and reiterated the mindful intention	The small group created a routine that was initiated with a mindful intention.	The small group did not set or include a mindful intention during the routine

	throughout the routine.		
Yoga	The small group created a routine with more than 10 but fewer than 15 postures.	The small group created a routine with at least 10 postures.	The small group had fewer than 10 postures in their routine
Breathing	The small group included breathing in the routine and concluded the flow with a mindful practice	The small group included breathing in either their yoga flow or mindful practice.	The small group did not include breathing during yoga routine and did not conclude the routine with a mindful practice.

APPENDIX G

Individual Yoga Routine Assessment and Rubric

Individual Moving and Learning Routine

Name:

For this assignment you will be assigned to create an original Moving and Learning routine along with rationale for creating the routine and specific instructions for application of the routine as a final project for the Moving and Learning unit.

The project will include the following elements:

Mindfulness: The Moving and Learning routine needs to have an initial intention (i.e. energy, calm, focus, etc.).

Yoga: You will need to incorporate a minimum of 15 postures with a maximum of 20 postures. The postures need to link together with breath.

Breath: Breathing that links to the yoga flow needs to be present. The Moving and Learning routine must finish with a mindful breathing practice.

Rationale: The student will write a rationale for the Moving and Learning routine.

Application: The student must include specific information include where, when, and what materials are needed about the application of their Moving and Learning routine.

Individual Moving and Learning Rubric

	Exceeds Proficiency	Meets Proficiency	Need Improvement
Mindfulness	The individual	The individual	The individual did

	initiated the routine with mindful intention and reiterated the mindful intention throughout the routine.	created a routine that was initiated with a mindful intention.	not set or include a mindful intention during the routine
Yoga	The individual created a routine with more than 10 but fewer than 15 postures.	The individual created a routine with at least 10 postures.	The individual had fewer than 10 postures in their routine
Breathing	The individual included breathing in the routine and concluded the flow with a mindful practice	The individual included breathing in either their yoga flow or mindful practice.	The individual did not include breathing during yoga routine and did not conclude the routine with a mindful practice.
Rationale	The individual has explained in great detail all of the elements of their	The individual can explain why they have chosen the specific skills that	The individual has not been able to provide specific examples from their

	routine.	they have included in their routine.	routine in their rationale.
Application	The individual has provided 3 of the 3 application requirements.	The individual has provided 2 of the 3 application requirements.	The individual has provided 1 or less of the 3 application requirements.