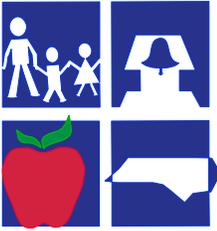


NCDPI



In partnership with:



North Carolina
Alliance for Athletics,
Health, Physical Education,
Recreation and Dance

Energizers were developed by:



**Activity
Promotion
Laboratory**

**College of Health
and Human
Performance**

Science Middle-School Energizers

Classroom-based Physical Activities

The way teachers integrate
physical activity with academic concepts



Acknowledgements

The "Energizers" were
developed by the

EAST CAROLINA UNIVERSITY
Activity Promotion Laboratory
Department of Exercise and Sport Science
College of Health and Human Performance

Energizer Team Members:

Matthew T. Mahar, Ed.D.
Donna P. Scales, M.A.Ed.
Tiana Y. Miller, B.A.

Rhonda K. Kenny, M.A.Ed.
A. Tamlyn Shields, M.A.

The goal of the Activity Promotion Laboratory is to promote active lifestyles. We are indebted to the North Carolina Department of Public Instruction (NCDPI), Be Active North Carolina, Inc., NC Healthy Schools, the NC Alliance for Athletics, Health, Physical Education, Recreation, and Dance (NCAAHPERD), and the Physical Activity and Nutrition Branch for providing funding for this project. In particular, we wish to thank Kymm Ballard at NCDPI for her non-stop support of the efforts to help teachers integrate physical activity into the school day.

In compliance with federal law, including the provisions of Title IX of the Education Amendments of 1972, N C Public Schools administers all state-operated educational programs, employment activities and admissions without discrimination because of race, religion, national or ethnic origin, color, age, military service, disability, or gender, except where exemption is appropriate and allowed by law.

Inquiries or complaints should be directed to:
Dr. Elsie C. Leak, Associate Superintendent
Office of Curriculum and School Reform Services
6307 Mail Service Center, Raleigh, NC 27699-6307
Telephone (919) 807-3761; fax (919) 807-3767

About the Cover: We would like to acknowledge and thank C.W. Stanford Middle School in Hillsborough, NC for their work with the Energizers and allowing us to use the picture on the cover.

Copyright © North Carolina Department of Public Instruction
First Edition: July 2006

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

NC Health and Wellness Trust Fund Commission

Established in May 2001, the NC Health and Wellness Trust Fund Commission (HWTF) invests in programs and establishes partnerships to address the health needs of vulnerable and underserved populations in North Carolina. Recommendations from HWTF's Study Committee on Childhood Obesity led to the amendment of the Healthy Active Children Policy requiring 30 minutes of daily physical activity for each child in grades K-8.



Fit Kids

Fit Kids, an initiative of HWTF, will provide curriculum-support materials to assist teachers with implementation of this mandate through a resource rich web site, www.FitKidsNC.com. HWTF will also provide trainings on physical activity integration into the school day using these web site resources to all K-8 teachers in the state. These trainings will be conducted through a grant to Be Active North Carolina and the Department of Public Instruction.



Energizer Partners

Be Active North Carolina

Be Active North Carolina, Inc. is a 501 (c)(3) non-profit organization dedicated to improving the health of all North Carolinians. Our mission is to increase the physical activity levels and healthy lifestyles of all North Carolinians through people, programs and policies.

The NC Department of Public Instruction

The North Carolina Department of Public Instruction is the agency charged with implementing the State's public school laws and the State Board of Education's policies and procedures governing pre-kindergarten through 12th grade public education. The elected State Superintendent of Public Instruction heads the Department and functions under the policy direction of the State Board of Education.

The agency has approximately 530 positions providing leadership and service to local public school districts and schools in the areas of curriculum and instruction, accountability, finance, teacher and administrator preparation and licensing, professional development, and school business support and operations.

The Healthful Living Section is responsible primarily for curriculum and staff development in the areas of health and physical education. In addition, we oversee the athletics, sports medicine, and drivers education programs for the K-12 public schools.

North Carolina Healthy Schools

The North Carolina Healthy Schools is funded by the Centers for Disease Control and Prevention. It is designed to create a working infrastructure between education and health to enable schools and communities to create a Coordinated School Health Program. The Department of Public Instruction and the Department of Public Health house the Senior Advisors who establish relationships and build capacity. A model school health program includes these eight components:

- Comprehensive School Health Education
- School Health Services
- A Safe Physical Environment
- School Counseling, Psychological and Social Services
- Physical Education
- Nutrition Services
- School-Site Health Promotion for Staff
- Family and Community Involvement in Schools

NC Healthy Schools focuses on improving the health of students and staff by providing coordination and resources. With all of these components in place and working together, students will be healthier in school, in class, and ready to learn.

Continued on next page

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

North Carolina Physical Activity and Nutrition (PAN) Branch

The Physical Activity and Nutrition Branch is housed within the NC Division of Public Health, NC Department of Health and Human Services. The PAN Branch is the lead state agency for developing and implementing healthy eating and physical activity interventions with state and local health agencies, as well as with community partners throughout the state.

The PAN Branch's mission is to stem the rising tide of obesity and chronic disease among North Carolinians by helping them to eat smart, move more and achieve a healthy weight. This mission is accomplished through the administration of successful statewide programs such as the NC Statewide Health Promotion Program and the NC Arthritis Program.

The PAN Branch staffs the Eat Smart, Move More...North Carolina movement, guided by the Eat Smart, Move More Leadership Team. The movement encourages healthy eating and physical activity wherever people live, learn, earn, play and pray. Eat Smart, Move More...NC exists because statewide partners collaborate to increase opportunities for healthy eating and physical activity through changes in policies, practices and environments. The shared vision among the many partner organizations is a North Carolina where healthy eating and active living are the norm, rather than the exception.

For more information on Eat Smart, Move More...NC visit www.EatSmartMoveMoreNC.com

The North Carolina Alliance for Athletics, Health, Physical Education, Recreation and Dance (NCAAHPERD) is an alliance of six associations:

- Dance Education Association of North Carolina (DANCE)
- North Carolina Association for Athletic Education (NCAAE)
- North Carolina Association for the Advancement of Health Education (NCAAHE)
- North Carolina Sports Management Association (NCSMA)
- Physical Education Association (PEA)
- Student Majors Association (SMA)

NCAAHPERD's mission is to provide advocacy, professional development, and unity for health, physical education, recreation, dance, and athletics professionals and students in order to enhance and promote the health of North Carolinians. Our vision is to be the leading organization promoting and supporting a healthier, more creative, and active North Carolina.

NCAAHPERD is one of North Carolina's oldest professional associations dedicated to the advancement of research and education within the fields of Athletics, Health, Physical Education, Recreation and Dance. NCAAHPERD is involved in advocacy initiatives locally and nationally.

Energizers Background

In January of 2003, the State Board of Education passed the Healthy Active Children Policy (HSP-S-000). This policy provides schools with guidance for local school districts to promote coordinated school health programs, and emphasizes physical education and physical activity components. In April 2005, the State Board of Education revised the policy to mandate that schools provide a minimum of 30 minutes of physical activity for all K-8 students daily. It further states, "the physical activity required by this section must involve physical exertion of at least a moderate to intense level and for a duration sufficient to provide a significant health benefit to students". [A moderate level is described by most as a "brisk walk".] Finally, the revised policy states, "structured/unstructured recess and other physical activity (such as, but not limited to, physical activity time, physical education or intramurals) shall not be taken away from students as a form of punishment. In addition, severe and/or inappropriate exercise may not be used as a form of punishment for students." In order for this to happen in NC classroom teachers must take a small, but important role to assure children are provided with the mandated amount of physical activity.

It is through the support of NC Health and Wellness Trust Fund, NC Healthy Schools, Be Active North Carolina, Inc., NC Alliance for Athletics, Health, Physical Education, Recreation, and Dance (NCAAHPERD), NC Department of Public Instruction and the Physical Activity & Nutrition Branch who allowed East Carolina University (ECU) to write, pilot, and develop the Energizers for daily use by classroom teachers.

This was a much more difficult task because of the "cool" factor associated with middle school students. That is, middle school students are reluctant to do anything that makes them feel uncomfortable. Due to this barrier, ECU has tried to design activities and movements that middle school students will feel comfortable performing. A Movement Bank is provided at the end of this booklet that can help teachers choose activities that work in their classrooms.

Most of the activities are associated with North Carolina Standard Course of Study Objectives. Some activities do not have associated Standard Course of Study Objectives, but can still be useful as a review of previously covered concepts. In addition, although a specific activity may be identified with a specific grade level because of the Standard Course of Study Objective, teachers of other grade levels may be able to use these activities by modifying the content. Along those lines, we encourage teachers to review the Middle School Energizers in other content areas, as they may be able to easily modify those activities to fit within their own content area.

To help develop age-and content-appropriate activities, ECU's team of physical activity specialists collaborated with a group of middle school teachers from the following content areas: math, language arts, science, music, health and physical

Continued on next page

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

education, and social studies. After the Middle School Energizers were developed, they were sent to middle school teachers throughout the state for pilot testing. The feedback from middle school teachers was then used to revise the Middle School Energizers to their final form.

The following middle school teachers significantly contributed to development of the Middle School Energizers:

Barnanne Creech (Zebulon GT Magnet Middle School, health and physical education)

William Fuller (CM Eppes Middle School, social studies)

Jeff Gibson (Ayden Middle School, music)

Christine Hodges (Pitt County Schools, language arts)

Madeleine Mahar (St. Peter's Catholic School, math)

Vivian Smith (EB Aycock Middle School, science)

We recognize that some teachers will be reluctant to try Middle School Energizers in the classroom because of the concern that students will be "out of control." However, evidence is mounting that students learn better when they move (e.g., use of classroom-based physical activities has produced improvements in on-task behavior). Also, we intuitively know that many students find it hard to sit at a desk for an extended period. These activities may be what is needed to help students look forward to school and to learn better.

Directions

Teachers should align the Energizer activities with the curriculum content they will teach for the year. Middle School Energizers are provided by subject, so that Middle School Teams can discuss how to implement them. This way, content specific teachers can rotate who will provide activity allowing the responsibility to be shared when students are not in physical education, intramurals, or other designated physical activity time. We suggest using these Middle School Energizers two to three times per day, when possible. Most activities are easily adapted for special needs students, rainy days, and other areas of study by changing the focus.

Availability

The "Energizers" will be available on the following web sites free in PDF format for easy download:

NC Healthy Schools: www.nchealthyschools.org

Be Active North Carolina, Inc: www.beactivenc.org

NC Physical Education for Me: www.ncpe4me.com

Eat Smart Move More NC: www.eatsmartmovemorenc.org

NC Health and Wellness Trust Fund: www.fitkidsnc.com

NCAAHPERD: www.ncaahperd.org

ECU Activity Promotion Lab: www.ecu.edu/cs-hhp/exss/apl.cfm

We are proud of the work from all of the partners that made this document a reality.

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

What Teachers Say About Middle School Energizers

"Middle School Energizers are easier to do than I first thought."

"The Crazy Coordinates activity is good for ADHD kids who need to move!"

"The students were impressed with the way we combined social studies, math, and PE, all in one lesson. Most students will want to do the Miles Apart activity longer."

"The Mapercise activity worked great, just as instructed. Kids really liked the racing and movement aspect."

"Students love this activity [Bring It On]! It holds their attention and offers a chance to move and 'get the wiggles out'."

"The 'wiggly' kids loved this [Race to Grammar]. They were helping each other and cheered each other on. What a stress reliever for all."

"In the Name That Shape activity, having students draw polygons on paper after performing the activity reinforces learning and helps the student to be accountable and involved."

"Operation Computation was quick and easy to do."

"Hot Tamale is a good activity to use after the mock EOG."

"Crazy Questions is good for sequencing, listening skills, auditory processing, and multiple intelligences."

"Ups and Downs was an excellent activity. The students were eager to participate and it became more fun as the activity progressed."

"Students loved Stop, Clap, and Rap. It was a lot of fun."

"I used Stop and Scribble as a review game in social studies and for a spelling test. Surprisingly, it worked to focus students more than distract. The in-place activities could be used as memory joggers for anything from grammar to geography. Great, super easy, and fun!"

"Size It Up is an excellent way to review and reinforce formulae."

"I used Show Me the Mean, Median, Mode with pre-algebra. It was a great change of pace."

Continued on next page

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

"Have a Ball was fun and easy to incorporate in my class."

"Middle School Energizers can be independent practice and application of the content taught."

"Many Middle School Energizers are excellent for reviewing content previously covered."

What Students Say About Middle School Energizers

"It gets your brain going."

"It [Chapter Review Charades] gives me a new way of identifying words."

"It [Name That Shape] helped me remember the number of sides on the shapes."

"True or False was a fun activity and it kept us active."

"It gets your mind working."

Creating A Physically Active Classroom Atmosphere

Below are some helpful hints for classroom teachers to use to create a physically active environment:

1. Create a positive atmosphere that enhances the self-esteem for all students. Each student should feel respected and valued. We do not all move alike or at the same speed. Value each child based on individual abilities. Modify activities when needed.
2. Have a signal or sign that can refocus students quickly so that they can "freeze" and listen to you when you need to speak or end the activity.
3. Share appropriate personal information with your students. Students respond favorably to the instructor who shares personal anecdotes or participates with them actively.
4. Be Fair. Make certain each student understands the teacher's expectations prior to the start of the activity.
5. Expect Success! Assume all students can, and want, to be active-including those with special needs.
6. Model enthusiasm for physical activity. Be aware that students (at first) may seem apathetic or silly. These are common expressions of being self-conscious about trying something new in front of their peers. With practice, this discomfort can be minimized and students will be more relaxed and willing to participate.
7. Give instructions before and after arranging the room to get ready for participation. Remind students of the rules for the activity and the "freeze" signals.
8. Take time to make sure that objects are out of the way for safe movement.
9. Set a time limit for the activity before beginning movement. Be sure to share with students.
10. Compliment groups or individuals so that all groups or individuals feel as though their participation was valued.

Ideas for Signals:

1. "Give me a hand" - Tell the kids, "give me a hand" and students raise one hand in the air. "Give me a clap" and students clap. "Give me a stomp" and students stomp one foot. You can then ask any combination such as "Give me three claps and a stomp" and the attention is focused on you.
2. Have a "laughing scarf". When the kids see the scarf - students may laugh. However, when you put it away, that means "silence" and all attention is on the teacher. This keeps students from laughing at others.
3. Have live music you can play and stop when you want students to freeze.
4. Begin to clap 3 times, then repeat as often as needed to refocus students. You can also clap at different levels of loud to soft or change the tempo of the clap to gain their attention.
5. Put your hand in the air. Tell students that when our hands go up, our mouths go closed.

HEALTHY ACTIVE CHILDREN RESOURCE SHEET

Resources for Principals (www.ncpublicschools.org/curriculum/health)

- Healthy Active Children Policy HSP-S-000
- *Appropriate and Inappropriate Practices*
- *Move More: North Carolina's Recommended Standards for Physical Activity in School*
- Teacher evaluation review form
- Physical education program evaluation as a demonstration school

The Balanced Curriculum documents can be a great resource in transitioning schools. These documents are located at www.ncpublicschools.org/curriculum.

- *A Balanced Curriculum: A Guiding Document for Scheduling and Implementation of the NC Standard Course of Study at the Elementary Level and*
- *A Balanced Curriculum: A Guiding Document for Scheduling and Implementation of the NC Standard Course of Study in the Middle Grades*

Resources for Teachers (www.ncpublicschools.org/curriculum/health)

- www.FitKidsNC.com Web site: A new resource-based website that will provide information and hands-on support materials for teachers, parents and community leaders.
- Elementary and Middle School Energizers: www.ncpe4me.com
- Classroom Management Techniques
<http://www.theteachersguide.com/ClassManagement.htm>
<http://www.teachervision.fen.com/>
<http://drwilliampmartin.tripod.com/classm.html>
- Creating a Physically Active Classroom Atmosphere
- National Association of Sport and Physical Education (NASPE) Teacher Toolbox for teachers
- *Inclusive Physical Education*
- LEP students in Physical Education
- *Appropriate and Inappropriate Practices*
- *“North Carolina Intramural Handbook: Active Living Through Sport and Activity -*
www.ncpublicschools.org/curriculum/health/resources
- Physical education program evaluation as a demonstration school
- www.d2f.org
- www.pecentral.org

Table of Contents: Science

Chapter Review Charades	13
Don't Break Newton's Laws	14
Go with the Flow (of Energy).....	15
Heart Rate.....	16
Human Air Molecule - Demonstration of Humidity	17
May the Force Be With You.....	18
Mind over Matter	19
Modified Baseball Review.....	20
Osmosis Jones.....	21
Shake, Bake, Twist, and Mist	22
Simple Machine Course.....	23
To Infinity and Beyond.....	24
Vocabulary Tag.....	25
Wave Science	26
We Are Orbiting.....	27

Adaptable to Any Subject

Alphabet Soup	28
Crazy Questions.....	29
Everybody is a Star.....	30
Have a Ball.....	31
Hot Tamale.....	32
I'm A Student and You're a Student, Too!	33
Sports on the Move.....	34
What's My Job?	35
World's Strongest Student	36
Energizers Movement Bank.....	37

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

Name of Activity: Chapter Review Charades
Grade Level: 6th - 8th
Subject Area: Science
North Carolina Standard Course of Study Objective Number(s):
Review of any content area
(e.g., 6.01)
Formation: Groups of 3
Equipment: Flashcards, timer

Rules/Directions:

1. Students will play charades and compete in small groups.
2. The teacher will prepare a set of cards with various concepts and vocabulary words from the objective covered in class.
3. One member of the group will pick a card, and then must act out the concept for his/her group.
4. The group has 2 minutes to guess the concept; group members must march or jog in place until they guess the correct answer or time expires.

Variations:

1. The teacher calls the concept and each group has to talk about how to physically illustrate the concept.
2. Each group will perform the action for the class.
3. Use different concepts
 - Simple Machines
 - Force and Motion
 - Levers
 - Newton's Laws
 - Solar System
 - Rocks and Matter
 - Energy

Name of Activity: Don't Break Newton's Laws
Grade Level: 7th
Subject Area: Science
North Carolina Standard Course of Study Objective Number(s):
6.03 Evaluate motion in terms of Newton's Laws
Formation: Standing at desks
Equipment: Paper ball

Rules/Directions:

1. Students make a paper ball and perform the following activities for one minute each. They will record the number of successful catches for each activity.
 - a. Toss and catch (to self).
 - b. Toss and catch (to self) while hopping on left foot.
 - c. Toss and catch (to self) while walking in place.
 - d. Toss and catch (to self) while hopping on right foot.
 - e. Toss and catch (to self) while jumping in place.
 - f. Toss and catch (to self) while jogging in place.
 - g. Compare recordings and discuss Newton's laws.
 - the force and friction retards motion
 - for every action, there is an equal and opposite reaction
 - the greater the force, the greater the change in motion
 - the object's motion is the result of the combined effects of all the force acting on the object
 - a moving object that is not subjected to a force will continue to move at a constant speed in a straight line
 - an object at rest will remain at rest

Variations:

1. Perform each activity with a partner.
2. Adapt this activity for the solar system to introduce weight on other planets.
3. Students can create movements.

Name of Activity: **Go with the Flow (of Energy)**
Grade Level: 6th
Subject Area: Science
North Carolina Standard Course of Study Objective Number(s):
4.01 Describe the flow of energy and matter in natural systems
Formation: Class is divided into four groups; each group is assigned to one area of the room
Equipment: Several of any object (e.g., piece of paper, ball, etc.) to represent energy

Rules/Directions:

1. Divide class into 4 equal groups. Label each group as a part of the ecosystem: (1) sun, (2) producers, (3) consumers, or (4) decomposers. Separate each group into 4 different areas of the room.
 - Sun: walk in a circle (to simulate rotation)
 - Producers: Jump or hop in one place
 - Consumers: Standing sit-ups (touch right elbow to left knee)
 - Decomposers: Squats
2. Teacher sets out a yellow piece of paper or a ball for each student in the sun group.
3. The students who are assigned to be the sun will walk to pick up the object that represents energy (e.g., piece of yellow paper). The "sun" will bring the energy to any producer (i.e., student must know that energy flows from the sun to producers) and return to the area they started from and carry out designated movement.
4. The "producer" will take the energy to any consumer (i.e., student must know that energy flows from producers to consumers and return to designated spot and continue movement).
5. The "consumer" will bring the energy to any decomposer and return to designated spot.
6. The "decomposer" will return the energy to the starting spot to start the process again (since energy cannot be created or destroyed).
7. Process is continued until each "sun" transfers energy to each "producer" who transfers energy to each "consumer" who transfers energy to each "decomposer."

Variation:

1. Use specific examples of producers, consumers, and decomposers rather than just the general term. Create a chant to reinforce the direction of the cycle.

Advanced Variations:

1. Become a different portion of the chain
2. Before starting each student writes a part of the ecosystem on one side of a note card and an example on the opposite side.
3. Students can move in different ways. For example, the sun can move by spinning around, the producers can move by hopping on the right foot, the consumers can move by jumping with both feet, and the decomposers can move by hopping on left foot. Teacher can write cycle and designated movements for each group on the chalkboard.

Name of Activity: **Heart Rate**

Grade Level: 7th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

4.01 Analyze how human body systems interact to provide for the needs of the human organism;

4.03 Explain how the structure of an organ is adapted to perform specific functions within one or more systems;

4.04 Evaluate how systems in the human body help regulate the internal environment;

4.08 Explain how understanding human body systems can help make informed decisions regarding health
understanding human body systems can help make informed decisions regarding health.

Formation: Standing at desks

Equipment: Stop watch or wall clock with a second hand, data sheet, and graph paper

Rules/Directions:

Teacher should help students locate the carotid (neck) or radial (wrist) artery with index and middle finger to acquire the pulse count. Teachers should give the following directions:

- Find your pulse (at either carotid or radial arteries).
 - Start counting your pulse rate.
 - Stop and record.
1. Students will sit quietly for one minute, take their pulse, and record. This is the resting heart rate.
 2. Student will then exercise for one minute (jumping jacks, running in place, or other activities from the Movement Bank).
 3. Take the pulse rate and record. Repeat a different activity from the Movement Bank for one minute.
 4. Stop and take pulse for 1 minute and record number.
 5. Plot individual data on graphs.
 6. Teacher may repeat procedure for 10 minutes.

Name of Activity: Human Air Molecule - Demonstration of Humidity

Grade Level: 7th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

3.05 Examine evidence that atmospheric properties can be studied to predict atmospheric conditions and weather hazards

Formation: Divide class into two groups

Equipment: None

Rules/Directions:

Humidity is the measure of water vapor in the air. This is a demonstration of how the temperature of the air affects the amount of water vapor air can hold at a specific time.

Warm air: molecules of air are spread out and as individual molecules are moving quickly.

Cold air: molecules of air are close together and individual molecules move slowly. When air gets too cold, the water vapor is pushed out of the air and is released as precipitation. Have the students act out the configuration of the air at various temperatures.

Group 1: Air Molecules

Group 2: Water Vapor Molecules (perform the sign for rain see figure)



1. Teacher calls for the students to create a warm air mass.

The students move to create the following configuration. The students in the air group spread out. Students in the water group stand between students from the air group. No one is touching. Students from the air group begin marching/running in place.

2. Teacher calls for the students to create a cold air mass.

The students move to create the following configuration. Students in the air group are close together (shoulder to shoulder or holding hands) and the students in the water vapor group stand around the students from the air group, but not inside the configuration. Students in the water vapor group must jump outside of the circle. The students in the air group are not moving much at all.

3. Teacher continues to call various configurations so the students can practice the concept. Between each configuration have the students march in place as warm air molecules. Air mass configurations that effect the U.S. are mP (maritime Polar = wet and cold), mT (maritime Tropical = wet and warm), cP (continental Polar = dry and cold), and cT (continental Tropical = dry and warm). Between each configuration have the students march in place as warm air molecules.

Variations:

1. Have students switch groups.
2. Use as review of concepts after the lesson on humidity and air molecules has been taught.

Name of Activity: **May the Force Be With You**

Grade Level: 7th

Subject Area: Physics

North Carolina Standard Course of Study Objective Number(s):

6.03 Evaluate motion in terms of Newton's Laws;

6.06 Investigate and analyze the real world interactions of balanced and unbalanced forces.

Formation: Partners (choose someone of similar size)

Equipment: None

Rules/Directions:

1. The object is to get your partner off balance.
2. Use the following strategies to achieve this objective:
 - Partners stand face-to-face with hands together overhead (a stationary high 10). Push against your partner's hands and see who falls off balance. Progressions should be as follows: feet apart, feet together, standing on one foot.
 - Same as above with arms extended directly in front (parallel to the floor). Keeping arms straight, push against your partner's hands and try to get him or her off balance.
 - Partners push against one another's hands and try to step on their partner's feet.
 - Partners squat with arms crossing chest. Try to knock each other off balance.

Name of Activity: **Mind Over Matter**

Grade Level: 7th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

6.05 Describe and measure quantities that characterize moving objects and their interactions within a system.

Formation: Beside desk

Equipment: Chair

Rules/Directions:

1. Students complete the following exercises 2 times.
 - 30 seconds jumping jacks
 - 15 squats (Have students pretend to sit in an imaginary chair and stand back up.)
 - 30 seconds jogging in place
 - 15 knee lifts
 - 30 seconds hop left foot
 - 15 chair push-ups (Students place hands on back of chair or against wall and perform a push-up from a standing position.)
 - 30 seconds hop right foot
 - 10 chair dips (Stand with back to chair. Place hands on the edge of the chair. Bend and straighten arms.)
 - 30 seconds march in place
 - Stretch with both arms reaching to the sky for 10 seconds
2. Discuss with class how the following made a difference when performing each exercise.
 - Time
 - Distance
 - Mass
 - Force
 - Velocity
 - Center of Mass
 - Acceleration

Variations:

1. Repeat sequence 1 time.
2. If space is limited replace movements such as jumping jacks and chair dips with more appropriate items from the Movement Bank.

Name of Activity: **Modified Baseball Review**

Grade Level: 6th - 8th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

Review of any content area

Formation: Divide the class into two teams

Equipment: Whiffle ball (or paper ball) and bat, review question cards

Rules/Directions:

1. One team is at bat and the other is in the field.
2. The student at bat must answer a review question.
3. If the student's answer is correct, they hit the ball. If it is incorrect the student may refer to teammates for help.
4. After hitting the ball, the batting team must pass the bat to each team member without using their hands. Once a student has passed the bat he/she must do a victory dance.
5. Once the team in the field gets the ball they must do "over and under" with the ball. (Over and Under: The ball is passed over the head of one student and through the legs of the following student.) . Repeat until the object is passed to each student in the group.
6. If the team in the field can do this before the batter's team moves the bat, then the batter is out. If not, the batter's team wins a point.
7. Switch position after one out.

Name of Activity: **Osmosis Jones**

Grade Level: 7th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

3.05 Examine evidence that atmospheric properties can be studied to predict atmospheric conditions and weather hazards.

Formation: Divide class into groups of 2

Equipment: None

Rules/Directions:

1. Osmosis is the movement of liquid through a membrane.
Student 1: Cell Membrane/Membrane
Student 2: Water/Liquid
2. Teacher calls for the students to create an environment in which osmosis would occur. (e.g., salt water and fresh water).
3. The students move to create the configuration. Students in group 1 create a membrane (join hands and form a circle). Students in group 2 are split on the outside or the inside of the circle standing shoulder to shoulder. Students in group 1 are marching or running in place.
4. Teacher calls for the students to create different environments in which the water would flow in or out of the membrane.
5. The students move to create the configuration for 10-15 seconds.
6. Teacher continues to call various configurations so the students can practice the concept. Between each configuration have the students march in the direction flow would occur.

Variation:

1. Have the students in group 1 and group 2 switch roles.

Name of Activity: **Shake, Bake, Twist, and Mist**
 Grade Level: 6th
 Subject Area: Science
 North Carolina Standard Course of Study Objective Number(s):
 3.01 Evaluate the forces that shape the lithosphere including.
 Formation: Beside desks
 Equipment: None

Rules/Directions:

1. The teacher writes the following 4 phenomena and corresponding physical activities on the board:
 - earthquake ("shake") - shake or wiggle.
 - volcano ("bake") - squat down and jump toward the ceiling.
 - tornado ("twist") - twist.
 - hurricane ("mist") - imitate jogging through a strong wind.
2. The teacher reads a statement from below that describes one of the 4 phenomena.
3. The students must allow the teacher to finish reading each statement. They then determine which phenomenon the teacher is describing and perform the corresponding activity for 30 seconds.

Phenomena Descriptors:

- One of these is felt approximately every 30 seconds (earthquake).
- Its ultimate source of energy is heat and moisture from warm water (hurricane).
- Ocean water must be warmer than 81 degrees F for this to occur (hurricane).
- This is called a "funnel" until it comes in contact with the ground (tornado).
- This generates vibrations called seismic waves (earthquake).
- This phenomenon occurs when rock from the earth's mantle melts and moves up to the surface (volcano).
- These weaken when traveling over land or cool ocean waters (hurricane).
- The Saffir-Simpson scale categorizes these on a scale from 1 to 5 (hurricane).
- These send fiery bits and ash into the air. The bits that cool and return to the Earth are called "tephra" (volcano).
- Winds must be at least 74 mph (hurricane).
- The molten rock from the Earth's mantle, or "magma" that escapes during one of these is called "lava" once it reaches the Earth's surface (volcano).
- A "hotbed" for these in the U.S. extends from Texas up through Oklahoma, Kansas, Nebraska, and the Dakotas (tornado).
- Over 1 million of these occur annually, with some too small to be felt by humans (earthquake).
- Hazards associated with this phenomenon are storm surge, high winds, flooding, and tornados (hurricane).
- These occur along faults, or fractures in the Earth's crust (earthquake).
- These cause a storm tide, which can increase the mean water level by 15 feet or more (hurricane).
- In the mid-western U.S., these often form when warm, moist air from the gulf of Mexico collides with cold air from the north (tornado).

The Middle School Energizers were developed by East Carolina University, Activity Promotion Laboratory in partnership with the NC Department of Public Instruction (Healthful Living and Healthy Schools Sections), the Health and Wellness Trust Fund, Be Active North Carolina, the NC Alliance for Athletics, Health, Physical Education, Recreation and Dance, and the Physical Activity & Nutrition Branch.

Name of Activity: Simple Machine Course

Grade Level: 6th - 8th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

Review of any content area
(e.g., 6.02)

Formation: Create stations and divide the class into competition groups of no more than 4 members

Equipment: Various: calculators, jump ropes, cones, balls, hula hoops, stop watch

Rules/Directions:

1. Set up various stations. At each station have a question and/or a skill activity for students to perform.
2. The students must perform a physical activity as a group.
3. Upon completion of that action, the students are to complete the academic task.
4. Have groups rotate through the stations.

Examples:

Station One: Physical Activity: Teams are to perform "Over and Under" twice with a ball, science book, or balled up piece of paper (Over and Under: the selected object is passed over the head of one student and through the legs of the following student). Repeat until the object is passed to each student in the group.

Academic Task: Calculate the mechanical advantage of several simple machines.

Station Two: Physical Activity: Teams are to do imaginary jump rope 15 times each.

Academic Task: Calculate the efficiency of various simple machines.

Station Three: Physical Activity: Teams are to run through a twisting course of cones, beakers, or chairs.

Academic Task: Identify the correct class of lever for each picture.

Station Four: Physical Activity: Each member swings an imaginary hula hoop around his/her waist 15 turns.

Academic Task: From a description, students must identify the correct simple machine to use for each task in the descriptions.

Variations:

1. Instead of hula hoop have student pass science book around his/her body.
2. Have the students create physical tasks that can be done by teams.
3. Demonstrate the type of lever using body parts.
4. Do only one station per day if time is an issue.
5. Create more stations if the class size is large.
6. The team that completes the course the fastest with the most correct answers wins.

Name of Activity: To Infinity and Beyond

Grade Level: 6th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

5.05 Describe the setting of the solar system in the universe.

Formation: Beside desks

Equipment: None

Rules/Directions:

1. The teacher writes the following 4 solar system vocabulary words and corresponding physical activities on the board:
 - Constellation - shake or wiggle.
 - Telescope - squat down and jump toward the ceiling.
 - Sun - twist.
 - Galaxy - jog in place or walk on the moon
 - Universe - touch head, shoulders, knees, and toes.
2. The teacher reads a statement from below that describes one of the 4 vocabulary words.
3. The students must allow the teacher to finish reading each statement. They then determine which vocabulary word the teacher is describing and perform the corresponding activity for 30 seconds.

Descriptors:

- Its diameter is one hundred times greater than the diameter of the earth (sun).
- The Milky Way (galaxy).
- Group of stars that form a pattern in the sky (constellation).
- Placed on mountain tops and rural areas (telescopes).
- One of countless stars in space (sun).
- Contains billions of galaxies (universe).
- Uses a curved mirror that gathers light (telescope).
- Groups of millions or billions of stars (galaxy).
- All of the planets orbit this (sun).
- This contains everything (universe).
- Many of these were named after ancient gods (constellation).
- A device that gathers electromagnetic radiation (telescope).

Name of Activity: **Vocabulary Tag**
Grade Level: 6th - 8th
Subject Area: Science
North Carolina Standard Course of Study Objective Number(s):
Review of any content area
(e.g., 5.01, 5.02, 5.03, 5.04)
Formation: Standing at desks
Equipment: Overhead, whiteboard, or chalkboard, vocabulary list

Rules/Directions:

1. Vocabulary list with corresponding activities should be posted.
Examples:
 - Gene - jumping up and down
 - Chromosome - jumping jacks
 - DNA - lunging to the right
 - Punnett Square - lunging to the left
 - Dominant - toe touches
 - Recessive - twisting at the waist
2. Students will stand at their desk and march in place until the teacher tags a student or asks for a volunteer.
3. Once the student is tagged, he/she will define or explain the vocabulary word or concept from the overhead list.
4. All students will then perform the activity matched with the word for 10 seconds.
5. Time is called and the students begin to march in place as the teacher selects the next student.
6. That student repeats the process.

Variation:

1. Have the students create actions that relate directly to the vocabulary word/concept. Post those actions on the overhead or board to use.

Name of Activity: **Wave Science**

Grade Level: 6th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

6:03 Analyze sound as an example that vibrating materials generate waves that transfer energy.

Formation: Students in circle around room

Equipment: None

Rules/Directions:

1. Students form circle and begins the wave around circle.
2. After 3 rounds, students do the full body wave from arms up to squat and back up.
3. After 3 more rounds, students continue with the wave doing various activities such as knee lifts or slides (see Movement Bank).

Variation:

1. This activity can explain the concept of how sound waves travel.

Name of Activity: We Are Orbiting

Grade Level: 6th

Subject Area: Science

North Carolina Standard Course of Study Objective Number(s):

5.01 Analyze the components and cycles of the solar system;

5.05 Describe the setting of the solar system in the universe.

Formation: Students at desk

Equipment: None

Rules/Directions:

1. Students are taught the distance of each planet from the sun. Each desk will represent the sun.
 - Mercury ~ 35 million miles
 - Venus ~ 65 million miles
 - Earth ~ 93 million miles
 - Mars ~ 137 million miles
 - Jupiter ~ 467 million miles
 - Saturn ~ 850 million miles
 - Uranus ~ 1.7 billion miles
 - Neptune ~ 2.7 billion miles
 - Pluto ~ 3.5 billion miles
2. One circle around the desk will represent 10,000,000 miles.
3. Teacher then calls out a planet and student jogs around desk the number of times needed to represent the distance of that planet from the sun.

Variations:

1. Teacher could call out asteroid, meteor, comet and the student would have to do a certain activity while orbiting.
Example: While orbiting, if teacher calls out "Comet is coming," then students must do 10 jumping jacks then continue orbiting.
2. Have the students go outside and walk around the school building or playground or some other area instead of desks.
3. Using sidewalk chalk outdoors the teacher will write the name of each planet in order from the sun. Students will begin at the sun and run to each planet and back to the sun in order from the closest planet to the farthest.
4. Desks may need to be rearranged.
5. Teacher can adjust how many miles are represented by each lap around the desk.
6. Convert miles to kilometers.

Name of Activity: **Alphabet Soup**

Grade Level: 6th

Subject Area: Miscellaneous

North Carolina Standard Course of Study Objective Number(s):

Formation: Teams of 4

Equipment: Alphabet blocks or scrabble tiles (2 sets) divided into 4 stations around the room, additional sets may be needed for vowels

Rules/Directions:

1. The object is for students to correctly spell the vocabulary word.
2. Teacher calls out a vocabulary word related to subject area.
3. One student from each team will go get one letter from a station and return to the group. All students remain moving (see Movement Bank) for the entire activity.
4. Students take turns getting letters until a team has spelled the word correctly.
5. The first team to spell the word correctly will earn a point.
6. Continue until all words have been spelled.

Variations:

1. Perform the activity as above and have teams make a sentence with the vocabulary words.
2. Make your own laminated alphabet cards.

Name of Activity: Crazy Questions
Grade Level: 6th - 8th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Four teams
Equipment: None

Rules/Directions:

1. Students group together into 4 teams (easiest way may be to have them group together by rows).
2. The teacher selects a list of vocabulary words or a set of questions from the end of a chapter.
3. The students must complete a series of movements to receive each question.
4. When each student in a group has completed the assigned movement they must sit down and raise their hands to receive each question.
5. The teacher will then approach the group to give them the next question.
 - a. To receive the first question, each student in the group must jump to the sky and slap the floor with their hand. Repeat 5 times.
 - b. To receive the second question, the students must hop on one foot while turning in a circle 10 times.
 - c. To receive the third question, students must run in place for 30 seconds.
 - d. To receive the fourth question, students must do imaginary jump rope as fast as possible for 10 seconds.
 - e. To receive the fifth question, students must complete all previous movements.

Variation:

1. This activity can be used for sequencing, listening skills, auditory procession, and multiple intelligences.

Name of Activity: **Everybody is a Star**
Grade Level: 6th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Walking around the classroom
Equipment: Pen and paper for the Journalist group

Rules/Directions:

1. Each student writes 3-5 questions a journalist would ask a *Celebrity/Super Star* and identifies one Super Star.
2. The class is divided into two groups: Journalists and Super Stars.
3. The journalists have 5 minutes to interview as many Super Stars as they possibly can, asking only the three questions they wrote down.
4. The Super Stars can never directly say their name or exactly what it is that they do. The Super Star group must constantly be walking because celebrities are very busy.
5. The journalists try to guess who the Super Stars are based on the answers to their question.
6. After 5 minutes has lapsed the Super Stars reveal who they are and the journalists check to see if their guesses were correct.
7. Switch roles.

Variation:

1. Journalists write an article about Super Stars. Super Stars write a reflective entry about their interviews. Incorporate writing techniques like persuasive writing and inferences. Share writing with the entire class.

Name of Activity: **Have a ball**

Grade Level: 6th - 8th

Subject Area: Miscellaneous

North Carolina Standard Course of Study Objective Number(s):

Formation: Students sitting at desks

Equipment: Each student should have a scrap piece of paper and make a ball

Rules/Directions:

1. Each student should wad up a piece of paper to make a ball. Use the piece of paper for the following exercises:
 - Place the ball on the feet (feet together) while seated, repeatedly toss up and catch the ball with the top of the feet (like hackey sack).
 - Set the ball on elbow. Flip the ball into the air and catch it with the hand on the same side.
 - Lift the feet off the floor (feet together) and rotate the ball over and under the legs using your hands.
 - Toss the ball overhead and catch behind back.
 - Lift the feet (feet slightly apart) and weave the ball between the left and right leg (such as a figure eight).
 - Toss the ball from behind the back and catch in the front.
 - Circle waist while standing.
2. This activity will strengthen the abdominal muscles and quadriceps.

Variation:

1. Allow each student to shoot the ball into the trashcan at the end.

Name of Activity: Hot Tamale
Grade Level: 6th - 8th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Beside desks
Equipment: None

Rules/Directions:

1. Write each direction and corresponding activity on the board or overhead to make it easier for the students to follow.
 - Move backwards - back stroke (swimming motion)
 - Move forward - march in place
 - Move to either side - side stretch in the direction of the hot tamale
 - Up higher - climbing ladder motion
 - Down lower - squats
 - Within one foot of the tamale - students pretend they are stepping on hot coals (in place).
2. One student exits the classroom.
3. The rest of the class watches the teacher hide the "hot tamale" (can be any object) somewhere in the classroom.
4. The student who exited the classroom re-enters.
5. The rest of the class tries to guide him/her to the hidden tamale by performing various physical activities, with each activity corresponding to a different direction. Students are not allowed to talk.
6. Once the student locates the hidden "hot tamale", another student is selected to exit the classroom and the "hot tamale" is hidden in another location so that the game can be repeated.

Name of Activity: **I'm A Student and You're a Student Too!**
Grade Level: 6th - 8th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Standing at desks or in a circle
Equipment: None (teacher may decide to use a small ball or bean bag)

Rules/Directions:

1. Students stand in a circle or at desks and march in place.
2. Teacher selects a student to begin the game by either pointing to or tossing a small ball to the student.
3. The student begins with the line "I'm a student and you're a student too if...."
4. The student fills in the end of this statement with something characteristic of them that other students may have in common.
Example: "I'm a student and you're a student too if you have on tennis shoes" or "I'm a student and you're a student too if you like to play basketball."
5. All students who share this trait perform an activity such as jumping into the air 3 times or walk to the front of the classroom and switch places with another student that shares the specified characteristic, while all other students continue to march in place.
6. The teacher then selects another student to continue the game.

Variation:

1. Instead of using the word student in the working phrase, insert the name of the school's mascot.
e.g., I'm a Pirate and you're a Pirate too if..."

Name of Activity: **Sports on the Move**
Grade Level: 6th- 8th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Standing at desk
Equipment: None

Rules/Directions:

1. Teacher will say a sport and movement and students will repeat that movement for about 30 seconds until a new movement is stated.

Examples:

- Basketball: dribble with fingertips; dribble through legs; dribble around back; jump shot and follow through; bounce pass; chest pass; overhead pass; defensive slide to front and back to start position
- Soccer: shot on goal (practice with both feet); inside of foot pass; outside of foot pass; long banana kick; juggle imaginary soccer ball; trap ball with thigh; trap ball with feet
- Baseball or softball: swing a bat; windup and pitch; field a ground ball; catch a fly ball; play imaginary catch
- Tennis: forehand; backhand; serve; volley
- Volleyball: serve, set, dig, spike
- Football: quarterback long pass; short pass; catch imaginary ball; kick field goal; punt; catch a punt; block
- Golf swing
- Drive a NASCAR
- Lacrosse
- Tae Kwon Do

Variations:

1. Ask students to name the sport and movement.
2. Tell students that mental practice and making correct fundamental movements without the equipment can improve performance.

Name of Activity: **What's My Job?**
Grade Level: 6th - 8th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Partners standing at desk
Equipment: Pencil and paper

Rules/Directions:

1. Students group into pairs at their desks.
2. Partners face each other (one facing the board and the other facing the back of the room).
3. The teacher writes a series of professions on the board which could include:
 - Teacher
 - Basketball Player
 - Hockey Player
 - Airplane Pilot
 - Doctor
 - Fireman
 - Chef
 - Truck Driver
4. The student facing the board must act out the entire list in 2 minutes while the student facing the back of the classroom attempts to write down which profession his/her partner is acting out.
5. After the 2 minutes has ended, the students facing the back of the classroom turn around and see if their lists match that on the chalkboard.
6. Students in each group switch places (the writer becomes the actor and visa versa).

Note: entire game could be played silently

Variation:

1. Create a different list of professions for each group.

Name of Activity: World's Strongest Student
Grade Level: 6th - 8th
Subject Area: Miscellaneous
North Carolina Standard Course of Study Objective Number(s):
Formation: Standing at desks
Equipment: None

Rules/Directions:

1. Have students imitate activities that competitors in the "Worlds Strongest Man" competition undertake. Perform each activity for 30 seconds.
 - Chain Drag (walking backwards and pulling)
 - Car Lift
 - Train Push (walking forward and pushing)
 - Anchor Carry (walking forward and pulling)
 - Pole Flip (pretend to toss a small tree trunk as far as you can)
 - Iron Cross (hold arms out to sides holding great weights)
 - Stone Wall (picking up heavy stones from the ground and stacking them on top of a wall)
 - Dead Lift (competitors squat and lift a barrel of rocks with increasing weight).
2. Repeat the entire sequence.

Variation:

1. Teacher may need to explain the activities to the students before the activity starts.

Energizers Movement Bank

1. **Loco motor (traveling forward, back, right, left)**
 - a. Walk
 - b. March
 - c. Jog
 - d. Step touch
 - e. Walking lunge
 - f. Skip
 - g. Grapevines
 - h. Slide
 - i. Gallop
 - j. Hop/jump

2. **Lifts (stationary or traveling)**
 - a. Knee lifts - hands gently touching opposite knee
 - b. Kicks- front, cross and side
 - c. Soccer kick
 - d. Hamstring curl
 - e. Heels- front and side, back
 - f. Kick backs

3. **Hops (stationary or traveling)**
 - a. Bunny hop
 - b. Basketball shoot
 - c. Jump rope
 - d. Boxing
 - e. Ski-stride
 - f. Twist- single/double
 - g. Dance steps- mamba, cha cha, chug, pivot turns

4. **Power (stationary)**
 - a. Jumping jacks
 - b. Lunges
 - c. Squats