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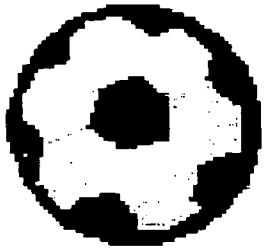
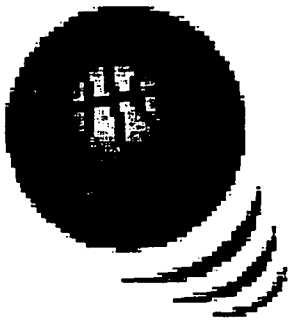
ABSTRACT

This booklet presents three model content standards for physical education in the state of Colorado, noting that there must be developmentally appropriate physical education programs for all students, from the physically gifted to the physically challenged. Physical education provides opportunities for students to participate in activities that promote wellness. As a result of physical education, students are more likely to be better prepared as productive students, workers, and contributors to their communities and organizations within society. The success of attaining physical education standards directly relates to student contact time, appropriate equipment, class size, and available facilities. The three Colorado model content standards are: (1) students must demonstrate competent skills in a variety of physical activities and sports, (2) students must demonstrate competency in physical fitness, and (3) students must demonstrate the knowledge of factors important to participation in physical activity. This booklet provides a rationale for each standard, explains what is needed to meet the standard, and breaks the standard down by grade level (K-4, 5-8, and 9-12). A glossary of terms is included. (Contains 10 references.) (SM)

COLORADO

MODEL CONTENT STANDARDS





PHYSICAL EDUCATION

Adopted 12/11/97

Colorado Model Content Standards for Physical Education

Task Force

Judith Gilbert, SADI Council, Eagle Rock School, Estes Park, Colorado

Marge Lindskog, SADI Council, Retired Teacher, Pueblo, Colorado

Cynthia Carlisle, University of Northern Colorado

Marjorie Corso, Woodland Park - Elementary

Mark Harvey, Metropolitan State College

Donald Gatewood, Denver Public Schools - High School

Jacquie Kitzelman, Fine Arts Consultant, Physical Education Consultant, CDE

Mary Lou Myers, Jefferson County - Elementary

Rick Penner, Eagle Rock School - High School

Dan Turnbull, Aurora Public Schools - High School

Ann Stewart, Roaring Fork Public Schools - Middle School

Don Watson, Senior Consultant, Assessment Unit, Colorado Department of Education

Tom Yokooji, Adams 12 Curriculum

Larry Zaragoza, Alamosa Public Schools - High School

INTRODUCTION

Colorado Model Content Standards for Physical Education

Physical education is a component of education that takes place through movement. It creates the opportunity for individuals to learn and understand academic applications for healthy lives. In physical education, as in all academic areas, students must learn the basic skills which require practice and refinement in physical education settings. Students integrate and apply these skills in everyday life. Through regular participation in physical activity, students will have the opportunity to develop a pattern of life-enhancing and self-rewarding experiences that contribute to their potential to be healthier members of society. Students should be challenged to participate daily in healthy choices and health-enhancing activities and behaviors.

Physical education and athletic programs have different purposes. The purpose of physical education is for all students:

- to learn and develop fundamental movement skills
- to become physically fit to participate regularly in physical activity
- to know the implications of and the benefits from involvement in physical activities, and
- to appreciate the value of physical activity and its contributions to a healthy lifestyle.

In contrast, athletic programs are essentially designed for students who desire to specialize in one or more sports and refine their talents in order to compete with others of similar interests and abilities.

Developmentally appropriate physical education programs are designed for every child from the physically gifted to the physically challenged. The intent is to provide students of all abilities and interests with a foundation of movement experiences that will eventually lead to active and healthy lifestyles. Physical education provides educational experiences that are movement based and that contribute to a student's comprehensive health status as well as other areas of academic performance and achievement. Federal legislation mandates that all children should have the right to participate in developmentally appropriate physical education activities, therefore, special populations should be recognized and their needs addressed. Inclusion of physically and mentally challenged students creates special conditions in the physical education classroom. Adjustments in teaching strategies to educate students with challenging conditions must be expected and accepted as a variable which will influence student results.

As an integral part of the educational process, physical education provides opportunities for students to participate in activities that promote wellness. Utilizing the strategies of problem solving, goal setting, and cooperative learning, physical education contributes to the understanding and knowledge of a healthy, active lifestyle, emphasizes safe and cooperative physical activity practices and contributes to an understanding of the consequences of substance abuse and to the practice and

promotion of non-violent physical activity. As a result of physical education, students are more likely to be better prepared as productive students, workers and contributors to their communities and organizations within society, as documented by the American Heart Association; the U.S Department of Health and Human Services, "A Report of the Surgeon General and the National Association for Sport and Physical Education (NASPE)."

Advances in technology applied in the physical education classroom provide a tool for instruction, assessment and record keeping. Technology offers the opportunity for advancement in instruction and enhanced student learning in physical education.

The success of attaining physical education standards is directly related to student contact time, appropriate equipment, class size, and available facilities. Physical education can occur in a variety of environments such as the dance studio, swimming pool, gymnasium, field house, court, playing field, weight room, and out-of-doors. To ensure the competent delivery of safe physical education programs that are developmentally appropriate, standards should be administered by licensed physical education specialists.

Colorado Model Content Standards

PHYSICAL EDUCATION

1. **Students demonstrate competent skills in a variety of physical activities and sports.**

2. **Students demonstrate competency in physical fitness.**

3. **Students demonstrate the knowledge of factors important to participation in physical activity.**

STANDARD 1: Students demonstrate competent skills in variety of physical activities and sports.

RATIONALE
As with all academic areas, basic skills are the foundation of a more active and productive life. The daily quality application of fundamental movement skills is the process by which we develop skillful movers.

In order to meet this standard, the student will:

- **demonstrate knowledge and application of fundamental movements skills: locomotor, non-locomotor* and manipulative*;**
- **move using the concepts from the movement framework* - - body, space, effort, and relationship;**
- **demonstrate competency in a variety of developmentally appropriate movement skills;**
- **apply movement skills to new activities and sports; and**
- **demonstrate the application of rules, strategies and behaviors in a variety of physical activity and sports.**

Grades K-4
In grades K-4, what students know and are able to do includes:

- demonstrating even rhythmic locomotor* movements: walk, run, leap, hop, and jump and uneven rhythmic locomotor movements: gallop, slide and skip;
- demonstrating dynamic and static balance, with control, on a variety of moving and stationary objects or equipment;
- demonstrating mature patterns in the fundamental manipulative skills: throw, catch, kick, trap, roll, dribble, strike and volley;
- developing patterns and combinations of movement into repeatable sequences; and
- demonstrating the ability to change directions (dodge), transfer weight (feet to hands) and fall with control.

* A glossary of terms can be found on pages 11-14 of this document.

Grades 5-8
As students in grades 5-8 extend their knowledge, what they know and are able to do includes:

- incorporating basic defensive and offensive strategies in modified net games* *(e.g., tennis, volleyball, badminton)* and invasive games* *(e.g., soccer, basketball)*;
- combining skills to competently participate in a variety of individual*, team* and dual* sports *(e.g., soccer, softball, tennis, track and field, team handball, field hockey and tumbling)*; and
- demonstrating one or more of the following dance or rhythmic activities: folk, square, social, creative, aerobic, modern, jazz, ballet and/or rhythmic activities such as rope jumping, lummi sticks* and tinikling*.

Grades 9-12
As students in grades 9-12 extend their knowledge, what they know and are able to do includes:

- demonstrating competency in one team-related activity or sport, through the execution of defensive and offensive strategies *(e.g., soccer, softball, basketball, floor/field hockey, volleyball)*;
- demonstrating competency in one individual activity *(e.g., aquatics, dance, gymnastics, golf, archery, adventure activities, and weight training)*; and
- demonstrating competency in one dual sport or game displaying an understanding of how it is played *(e.g., tennis, badminton, racquetball, frisbee, handball).*

STANDARD 2: Students demonstrate competency in physical fitness.

RATIONALE
Through regular participation in physical activity, students will develop appropriate levels of physical fitness. By obtaining and maintaining appropriate levels of fitness, students will be able to carry out daily tasks without undue fatigue, respond to emergency situations, and possess sufficient energy to enjoy active and productive lifestyles.

In order to meet the standard, students will:

- **develop health-related fitness*: cardiovascular endurance*, muscular endurance*, muscular strength*, flexibility* and body composition*;**
- **demonstrate competency in the following performance-related or motor skill fitness* components: agility*, balance*, coordination*, power*, reaction time*, and speed*;**

- **demonstrate an understanding that physical fitness is a part of a wellness* program; and**
- **design and use personal fitness programs and appropriate technology to achieve and maintain physical fitness.**

Grades K-4
In grades K-4, what students know and are able to do includes:
- performing aerobic* and anaerobic* self-testing activities;
- maintaining appropriate body alignment while performing fitness activities; and
- controlling and supporting body weight in a variety of fitness activities.

Grades 5-8
As students in grades 5-8 extend their knowledge, what they know and are able to do includes:
- demonstrating various techniques, safety factors and knowledge required in a variety of muscular endurance and strength activities;
- participating in a variety of aerobic and anaerobic activities to attain cardiovascular endurance;
- demonstrating correct techniques for increasing and maintaining flexibility;
- demonstrating correct techniques for warming up and cooling down prior to and following aerobic and anaerobic exercise; and
- demonstrating how physical fitness increases wellness.

Grades 9-12
As students in grades 9-12 extend their knowledge, what they know and are able to do includes:
- sustaining and maintaining a moderate aerobic activity to achieve cardiovascular benefits;
- demonstrating principles of fitness development (overload*, progression*, specificity* and individuality*) in all areas of health-related fitness;
- demonstrating how to set goals for improvement in the areas of health-related fitness; and
- implementing and refining a personal fitness plan.

STANDARD 3: Students demonstrate the knowledge of factors important to participation in physical activity.

In order to meet this standard, students will:
- **identify and describe the benefits, risks and safety factors associated with regular participation in physical activity;**
- **demonstrate knowledge that physical education activities**

such as dance, and sports come from a variety of cultural, historical, ethnic and national origins;

- **demonstrate knowledge of rules, strategies and appropriate behaviors for selected physical activities;**
- **demonstrate knowledge of biomechanical* principles that apply to the development of movement skills, for example, the analysis of a tennis swing or of shooting a basket;**
- **demonstrate the ability to set personal and group activity goals; and**
- **demonstrate the ability to set personal and group activity goals using appropriate technology.**

RATIONALE

The media and a variety of scientific sources report new evidence regarding the direct relationship between the comprehensive health of the student, the successful academic person and the quality producer in the work force. Therefore, in order to become a more active and productive citizen, the student must know how to make safe, healthy, and wise decisions about physical activity.

Grades K-4

In grades K-4, what students know and are able to do includes:

- demonstrating knowledge of games, rules and sportsmanship;
- demonstrating knowledge of the fundamental components, strategies, equipment and technology used for participation in a variety of physical activities;
- describing the healthful benefits that result from regular and safe participation in physical activity;
- identifying the origins of physical education activities through low-organized games* and dances representing a variety of ethnic cultures;
- demonstrating knowledge of the mature stage* of fundamental movement skills*; and
- designing games and movement sequences.

Grades 5-8

As students in grades 5-8 extend their knowledge, what they know and are able to do includes:

- demonstrating an understanding of the negative effects of substance abuse on personal fitness and the performance of physical activities;
- demonstrating an understanding of physiological* and motor learning* concepts during regular participation in physical activities;
- developing and maintaining an individual plan of activity using appropriate technological advances;
- demonstrating knowledge of the factors in both health-related and performance-related fitness;
- demonstrating knowledge of the roles of team members and officials in sports;
- demonstrating knowledge of defensive and offensive strategies in lead-up

games* and sports;
- demonstrating knowledge of complex movement skills used in physical activities;
- identifying the influences of culture, ethnicity and history on dance, low-organized and lead-up games, and other physical activities; and
- detecting, analyzing, and correcting errors in personal performance.

Grades 9-12
As students in grades 9-12 extend their knowledge, what they know and are able to do includes:
- demonstrating cooperative participation when engaged in competitive physical activities by following the rules and regulations specific to that activity;
- identifying performance-related factors* that contribute to participation in physical activity.
- comparing and contrasting the strategies of defense and offense in various sports;
- identifying and explaining the cultural, ethnic and historical roles of games, sports and dance;
- investigating the time, cost, available technology and participation requirements involved in a choice of physical activities;
- evaluating risks and safety factors that may affect physical activity throughout life; and
- analyzing biomechanical principles involved in sport to improve performance and reduce injury.

GLOSSARY

Aerobic exercise - long-duration exercise that relies on the presence of oxygen for the production of energy; it may be used to control body weight, reduce the percentage of body fat, improve the circulatory function, and reduce blood pressure.

Anaerobic exercise - short-duration exercise completed without the aid of oxygen; it is used to build muscle mass and to improve one's ability to move quickly and to deliver force.

Developmentally Appropriate Movements - the sequential movement experiences provided for children based on their individual, unique developmental levels.

Fundamental Movement Skills - basic movements that involve the combination of movement patterns of two or more body segments. The three categories of fundamental movement skills are locomotor, non-locomotor, and manipulative movements.

Locomotor movements - movements in which the body is propelled from one point to another. Examples include walking, running, leaping, hopping, jumping, galloping, sliding and skipping.

Non-locomotor movements - stability movements in which the axis of the body revolves around a fixed point. Examples include bending, stretching, twisting, turning, lifting and falling.

Manipulative movements - movements in which force is imparted to or received from objects. Examples include throwing, catching, kicking, trapping, rolling, dribbling, striking and volleying.

Fundamental Movement Stages - the period of movement skill acquisition for children ages two to seven years. It usually involves three stages of development:

Initial Stage - characterized by relatively crude, uncoordinated movements. The movements are at the beginning level or first attempt phase. (Typically, two- and three-year-olds function at this stage.)

Elementary Stage - characterized by improvement in coordination, rhythmical performance and greater control over physical movements. (Typically, three- to five-year-olds function at this stage.)

Mature Stage - characterized by the integration of all the component parts of a pattern of movement into a well-coordinated, mechanically correct, and efficient act. (Most six- or seven-year-olds can attain this stage.)

Games, Dance, and Self-Testing Experiences - represent the primary content areas of Physical Education.

Dance - Responding to rhythm is one of the strongest and most basic urges of children. Dance is an extension of rhythmical movement into creative, expressive, interpretative, and structured activity.

Rhythmic Fundamentals - involve developing an understanding and feel for the elements of rhythm. Rhythmic activities include discovering rhythm, applying rhythm, singing rhythms, finger plays, rhymes and poems, singing dances, and creative dance.

Lummi Sticks - are the small sticks (e.g., wands) used in a rhythmic activity to work on rhythmic tapping, flipping and catching.

Tinikling - is a rhythmic activity that involves steps, hops, jumps and leaps in various combinations inside and outside a set of two 8-foot poles.

Structured Dance - includes folk, square, country, aerobic, jazz, modern, and ballet.

Games - Games may be classified in a variety of ways depending on their purpose and nature. Games may be used as a tool for applying, reinforcing, and implementing a variety of fundamental movement and sport skills. Games may be a primary means of learning new movement skills.

Cooperative Games - emphasize group interaction and positive socialization in a cooperative setting that de-emphasizes competition.

Lead-up Games - active games that involve the use of two or more of the sport skills, rules, or procedures used in playing the official sport.
Low-Organized Games - include activities that are easy to play, have few and simple rules, require little or no equipment, and may be varied in many ways.
Fielding/Run-Scoring Games - games that involve a player striking or kicking an object and then running a specific pattern while the opposing team members retrieve the object (Examples: softball and kickball).
Invasive Games - played on courts, fields, rinks, or pools by two teams of equal sides. As the game is played, teams intermingle and attempt to outscore the opponent by invading the opponent's territory (Examples: basketball, soccer, ultimate frisbee).
Net/Wall Games - those games in which teams are divided by a net or play is against a wall (Examples: badminton, tennis, handball).
Target Games - those games that require a target(s) at which the players aim and must hit to score (Examples: bowling, golf, and recreational games such as billiards.)
Sports - games governed by a set of rules and regulations which may be classified as dual, individual, and team sports.

Dual Sports - such as badminton, tennis, handball, and racquetball.
Individual Sports - such as golf, swimming, cycling, bowling, and outdoor pursuits.
Team Sports - such as basketball, field hockey, soccer, softball and volleyball.

Self-Testing Activities - Movement activities that allow students to perform as individuals and to establish personal standards of achievement.

Apparatus Activities - activities that use either small apparatus (hoops, wands, balance boards, etc.) or large apparatus (balance beams, indoor climbers, cargo nets, etc.).
Individualized Movement Challenges - may be used to develop and refine movement skills.
Perceptual Motor Activities - develop and refine specific perceptual motor abilities and selected perceptual skills. Examples are body awareness, spatial awareness, directional awareness, and temporal awareness.

Movement Framework/Concepts - involves learning "how, where, and with what" the body moves.

Body - movements include parts of the body as well as total body actions.
Space - where the body moves:
Directions - include forward, backward, diagonally, sideward, up, down, and various pathways.
Levels - high, medium, and low heights.
Ranges - body shapes, spaces, and extensions.
Effort - how the body moves.
Force - how strong or light, with varying degrees.
Time - how fast or slow, sustained or sudden, with varying degrees.
Flow - whether the movement is free or bound, with varying degrees.
Relationships - the movements with objects and/or people.

Movement Skill Learning

Extension - a task that adds complexity or difficulty to the prior task.
Refinement - develops qualitative aspects of the previous extending task.
Application - a competitive, self testing, or performance focus of the task.

Physically Educated Person (National Association for Sport and Physical Education, NASPE,1992):

Has learned skills necessary to perform a variety of physical activities.
Is physically fit.
Does participate regularly in physical activity.
Knows the implications of and the benefits from involvement in physical activities.
Values physical activity and its contributions to a healthful lifestyle.

Physical Fitness - a positive state of well-being influenced by regular, vigorous physical activity, genetic makeup, and nutritional adequacy. Two aspects of physical fitness are health-related fitness and performance-related or motor skill fitness.

Health-related fitness - a relative state of being. The development and maintenance of health-related fitness is a function of physiological adaptation to increased overload.

Cardiovascular endurance - the ability of the heart, lungs, and vascular system to supply oxygen and nutrients to muscles during activity.

Muscular endurance - the ability of the muscles to exert force for an extended time.

Muscular strength - the ability of the muscles to exert one maximum effort.

Flexibility - the ability of the various joints of the body to move through their full range of motion.

Body composition - the proportion of lean body mass to fat body mass.

Performance-related or motor skill fitness - related to the quality of one's movement skill.

Agility - the ability to change direction quickly while the body is in motion.

Balance - the ability to maintain one's equilibrium in relation to the force of gravity.

Static balance - the ability to maintain one's equilibrium in a fixed position.

Dynamic balance - the ability to maintain one's equilibrium while the body is in motion.

Coordination - the ability to integrate separate motor systems with varying sensory modalities into efficient movement.

Power - the ability to perform one maximum effort in as short a period as possible.

Reaction time - the amount of time elapsed from the time the senses signal the need to move to the first movement of the body.

Speed - the ability to move from one point to another in the shortest time possible.

Principle: F.I.T.

Frequency - implies that exercise must be regular to be effective. The frequent use of a body part in vigorous physical activities will either improve its efficiency or help it remain at about the same state.

Intensity - physical exertion must be beyond that required for daily living to produce fitness gains.

Time - must be of sufficient duration to be effective.

Principles of Fitness Development:

Principle of Overload - increasing the amount of work done or reducing the period of time in which the same amount of work is accomplished.

Principle of Progression - based on the concept that overload of a specific muscle group must be increased systematically over time.

Principle of Specificity - the improvement in the various aspects of fitness specific to the type of training and to the muscles being exercised.

Principle of Individuality - each student improves in level of fitness at one's own individual rate.

Scientific Areas of Study:

Anatomy - the science of the structure of organisms, such as the human body, and the interrelations of all parts.

Biomechanics - a branch of physics that analyzes motion and the action of forces on material bodies, including static, kinetics, and kinematics.

Motor Development - maturation of the neuromuscular mechanism which permits progressive performance in motor skills.

Motor Learning - the study of various factors which affect learning and performance of skills used in sports and activities (practice, repetition and feedback).

Physiology - the study of the proper functioning of an organism; the science that includes the processes and mechanisms by which living animals and plants function

under varied conditions.

Specialized Movement Phase - the period of sports skill acquisition beginning with children who have attained mature fundamental movement patterns and continuing throughout life.

- **Transition Stage** - characterized by a high degree of interest in many sports with limited movement ability in any specific sport. (Occurs with students from about seven to ten years of age).
- **Application Stage** - characterized by the application of skills and knowledge of the game to participation in the sport itself, usually in a competitive or recreational setting. (Typically, 11- to 13-year-old students are in this stage).
- **Lifelong Utilization Stage** - based on previous fundamental skill and sport stages and continued throughout life. Individuals select activities which they wish to pursue.

Target Heart Rate - used to determine activity intensity. It is used to enhance the level of cardiovascular endurance. Target heart rate may be calculated by using the formula: (Maximum heart rate '220' - age) x 0.70 = target rate

Weight Training - a form of fitness training that usually includes working with four variables:

(1) amount of resistance (weight) per lift;
(2) number of repetitions of each lift (set);
(3) number of sets per workout; and
(4) number of workouts per week.

Wellness - a concept which suggests that all aspects of a person's life are balanced. In addition, wellness implies that a person will be active and free from disease.

Index Words

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