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APPROPRIATE EXERCISE VIDEOS FOR ADOLESCENTS

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Kinesiology

by
Rayna Allison Estrada

June 2003

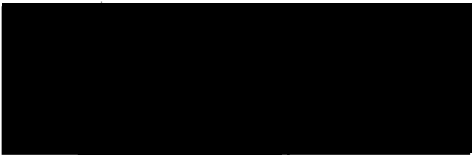
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Approved by:


Linda Wilkin, First Reader

3/5/2003
Date


Bryan Haddock, Second Reader

ABSTRACT

The purpose of this project was to review literature for appropriate elements that should make up an adolescent exercise video. Methods consisted of gathering research from twenty-three publications in books and professional journal articles. A review of the literature was examined to create chapters of information and a checklist pertaining to what makes up an appropriate adolescent exercise video. Results demonstrated that five out of the seven exercise videos that appeal to or are being used to teach adolescents are not appropriate. Many of these videos include movements that are too advanced for adolescents, including combination kicks and punching. For the most part, adolescents are coordinated to some degree but not as advanced as many videos assume. Other areas of deficiency include the lack of proper warm-up, cool-down, and stretching exercises. Many exercise videos that are being used for teaching incorporate poor fitness skills that adolescents will continue to use into adulthood. The checklist generated from this project was developed based on information found in the literature suggesting appropriate exercise guidelines for adolescents. The

conclusion was that many exercise videos used to teach adolescents are not appropriate for their age group. Videos need to incorporate the following fitness components: 1) proper techniques for warm-up, 2) proper techniques for cool-down and stretching, 3) proper guidelines for the frequency, intensity, and time.

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CHAPTER ONE

INTRODUCTION

Purpose of the Project

As a middle school physical education teacher in the city of Rialto, California, I have encountered many challenges. Our district enforces the use of the California State Physical Education Standards for all our students. The standards emphasize the importance of lifelong fitness. California Teaching standards for physical education have been around for some time, but it was not until recently that they have been enforced. These standards are now a large part of daily and yearly planning. Reading over the standards, I realized many of my units were going to need to change. While planning for my new units, I confronted a problem with one particular section, the fitness unit. I read through books for ideas and helpful hints such as station work, weight lifting, stair stepping, etc. I wanted to use all the facilities and equipment my school had available. I decided my class was going to utilize a 20-minute workout video. I did no research to find this video, and just decided to pick a video my students might enjoy. I literally expected my

middle school students to catch on to this fitness routine with no problems. The day my class performed this fitness video, was simply the worst day. My students could not keep up with the rhythm and routine especially while laughing at the instructor of the video. Some of the movements were outdated, dangerous, and overall inappropriate for adolescents to perform.

I decided to search for future videos specifically designed for adolescents. I came across numerous fitness videos for adults and toddlers, but very little for those 10-12 years of age. I decided to research what an appropriate fitness video would be for an adolescent. I wanted to find a video that was age appropriate, effective, and overall fun. I want my students to have a recommendation of a great fitness video that they can do at home. Also, I wanted to spread the information to other physical education teachers on the dangers of inappropriate exercise videos that were still in the fitness circuit. Hopefully, this will help students pursue a healthy life style away from school for years to come.

The purpose of this project was to review exercise videos for children. As a middle school physical education teacher, it is hard to find aerobic exercise videos that

are appropriate for adolescents. Problems with current exercise videos include out dated movements, music, and techniques. Another problem is the instructors on the video. They do not appeal to or relate to the adolescents that are the main audience. Some of the videos that may appeal to adolescents are not appropriate for the age groups they attract, such as the "Billy Banks Tae Bo" exercise tape. This tape appeals widely to the middle school population but is too advanced for adolescents. The examination of the literature on growth and development of children during the adolescent stage was examined for proper motor skill movements that should be incorporated in these videos. This project used the findings in the literature to critique adolescent exercise videos for appropriateness with the audience it is addressing.

CHAPTER TWO

ADOLESCENTS AND THEIR BODIES

Adolescents Getting to Know Their Bodies

"It is important for adults to realize that children are not just little adults" (Kraemer, 1993, p. 9).

Understanding how adolescent bodies develop will hopefully provide some realistic goals for children to attain. In order to examine adolescents and their bodies, certain areas of interest should be reviewed. Areas discussed are 1) physiological development and 2) movement and skill development. Educators need to teach children to become responsible for their own fitness. Adolescents need to know the importance of physical activity that is sufficient to stimulate normal growth and development (Green and Adeyanju, 1991). In this chapter, the subject of adolescents and how their bodies work is dissected into information that can be understood by physical educators so that they may teach their students appropriately.

In order to teach appropriate activities to adolescents, one must have a basic understanding of how this age group functions. Physiological development in adolescents starts around ten years of age and diminishes

around fourteen years of age. Growth in early childhood is known to be cephalocaudal or head to toe (Tanner, 1962). While young children are growing, it is said that growth starts with the brain and then moves to the limbs. The upper limbs develop first and the lower limbs follow soon after. While the development of larger body parts occur in the earlier ages of childhood, more specific body controls start to develop in adolescence (Staniford, 1982). Bodies begin to mature and grow during the adolescent period.

Adolescence usually results in a dramatic increase in both height and weight for both genders, with growth spurts occurring throughout (Zaichowsky, L.D., Zaichowsky, L.B., and Maniek, 1980). Height is a result of skeletal development in adolescence and according to Tanner, author of *Adolescent and Growth*; various dimensions accelerate in a particular order. Leg length peaks, hips widen, chest and shoulders become broader and the trunk and chest increase in depth during adolescence. Growth of the skeleton responds directly to hormonal stimulus or more probably accommodates itself to the tensions set up by the enlarging skeleton (Tanner, 1962). Bones adapt to the stress placed upon them. Stress, within limits, can increase bone growth. Low stress or inactivity has

detrimental effects on bone growth, as does activity that is intense enough to cause inflammation and fracture (Zaichowsky et al. 1980).

The increase in adolescent weight is a combination of the growing skeleton, soft tissue, and muscle mass that is maturing in the body. As boys and girls mature, their hormonal secretions are responsible for many of the significant changes in their bodies. In males, the secretion of testosterone increases their body weight and muscle size. Females on the other hand, secrete more estrogen, which has not shown any significant proof of influencing or increasing muscle (Kramer, 1993). Females do not have significant amounts of muscle mass, but are close to the same weight as males. Both genders have an abundant amount of fat in early childhood and as they progress towards adolescence females have greater amounts of fat than males. It is evident that the weight of females is due to more fat along with the developing skeleton. While in males, their weight is primarily due to muscle mass along with skeletal development. The body composition of an adolescent is suggested to be half of their body composition attained in adulthood (Leaver).

With the increase in the amount of bone, soft tissue, and muscle mass, adolescents have a lot to carry around with them daily. Learning how to control the limbs that have experienced a growth spurt and how to manage daily activities such as walking and running may become frustrating. During adolescence, many people refer to this age as the "clumsy" stage. Adolescents have long legs and arms without the complete muscle mass to support such heavy areas of their bodies. Trying to teach adolescents new skills can be a challenge. It is important to base new skills on fundamental movements they already know and have mastered.

There are numerous concepts children should know before they move into the adolescent stage, such as basic body awareness. According to Staniford (1982), body awareness is what the body is capable of doing such as bending, stretching, and twisting. It is important that adolescents realize what limitations they have so they will not injure themselves in the process of new skill acquisition.

Space awareness must also be taken into consideration when it comes to learning and performing a new movement. This is described as how a child knows where the body is in

space such as directions, pathways, and planes in which they move (Staniford, 1982). Included in space awareness are the planes in which the body moves such as side-to-side, up and down, as well as front and back. It is not uncommon for children to have difficulties distinguishing left and right sides.

Development of both sides of the body rather than just one is necessary, because this is obviously what leads to greater efficiency of movement and balance (Stewart, 1990). Children must be able to also identify their surroundings. According to Stewart, author of *Right to Movement*, children must be able to plan and execute an efficient course of action when moving from one position to another (1990). Childhood motor skill development continues to improve with age (Zaichowsky et al, 1980). "Changes in motor performance tend to parallel the changes in body size, strength, and other physiological functioning at puberty" (Tanner, 1962, p. 310). The ultimate intent of teaching physical education is to help a child understand the capabilities of their body and at the same time understand the limitations they may encounter as a result of development.

CHAPTER THREE

FUNDAMENTAL SKILLS

Three Fundamental Skills

In order for adolescents to learn new movement patterns and skills, it is crucial that they are aware of various locomotor patterns (Leaver, p.1). Fundamental movement abilities are locomotion, manipulation, and non-locomotion skills that are essential for later development of work, sport, dance, and leisure time skills (Staniford, 1982). Staniford also explains that if these skills are not nurtured, practiced, and developed during early childhood, the chances are slim that the children will learn or refine these skills later in life. During childhood, children learn basic motor skills that provide the basis for lifelong activity (Corbin, Pangrazi and Welk, 1994). The three basic fundamental skills are discussed in this chapter.

One of the first fundamental skills needed to succeed with moving and developing new patterns is locomotion. Locomotion can be defined as movement through space (Leaver, P.8). A more detailed definition is given by Gallahue, which states, "locomotion refers to the change of

location of the body relative to fixed points on the ground" (1982, p.380). Locomotor abilities are developed to the extent that adolescents are able to gallop, skip, jump, run, slide, walk, and climb in a mature pattern (Gallahue, 1982). Adolescent children need to learn to control the movements of their body to a point of mastery. Movement does not only include those in which travel occurs, but also movement in which one is stationary. Movements that require children to stay in place are called non-locomotion. This movement is better defined as the ability to maintain one's balance in relationship to the force of gravity even though the nature of the application of the force may alter parts of the body placing them in unusual positions (Barrow and McGee, 1979). Examples of this include bending, stretching, twisting, turning, swinging, inverted supports, body rolling, landing, stopping, dodging, and balancing.

A specific skill that is important to learning a new movement in the non-locomotion category is balance. Balance is the ability to maintain the equilibrium of ones' body when it is placed in various positions (Barrow and McGee, 1979). Balance is the basis of all movements and is influenced by a variety of factors. Static balance and

also involves other learning abilities such as coordination.

Coordination is synchronized movement patterns and patterning in sequential neuromuscular development (Leaver, p.8). Coordination is the ability to integrate separate motor systems with varying sensory modalities into efficient patterns of movement (Gallahue, 1982).

Coordination is interrelated with the motor abilities of balance (Barrow and McGee, 1979). According to Barrow, coordinated behavior requires a child to perform specific movements in a series both quickly and accurately.

Movements when striking and kicking must be synchronous, rhythmical, and properly sequenced in order to be coordinated.

Fundamental movement abilities include locomotion, manipulation, and non-locomotion skills. In order to master these skills in adolescence, students need to be introduced early in childhood. Specific skills such as good balance and coordination contribute to the successful development of these the three fundamental skills.

CHAPTER FOUR

COMPETENCIES

Five Components of Fitness

Adolescents and teachers must be aware of the five components of fitness in order to evaluate and maintain a healthy lifestyle. "Researchers have identified these components of physical fitness as a determining factor of an individual's overall physical performance capability" (Dougherty, 1993, p.4). The most common names for these components of fitness are cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition. This chapter discusses the five components of fitness and defines each one.

Cardiovascular Endurance

One study suggested that more than half of all middle school students surveyed did not know about or had ever heard of the term cardiovascular endurance (Placek, Griffin, Dodds, Raymond, Tremino, & James, 2001).

There are numerous definitions for cardiovascular endurance from many researchers, authors, professors, and physicians. The easiest definition is summed up in the Get Fit Handbook for ages 10-13. This definition states

cardiovascular endurance is, "the ability of your heart, lungs, and blood vessels to supply the muscles with oxygen for a long period of time" (U.S. Department of Health and Human Services, 2001, p.8). The longer the muscles in the body can perform an activity, the better cardiovascular endurance that person has. The ability to recover after strenuous exertion is also a sign of good cardiovascular endurance (Dougherty, 1993).

Examples of excellent cardiovascular activities include cycling, running, swimming, and walking. All activities that require the use of muscles for a continuous period of time would be considered cardiovascular endurance. In an exercise video for adolescents, cardiovascular endurance should be enhanced during the section where rhythmic movements using the large muscle groups take place.

Muscular Strength

"Students had more familiarity with the term muscular strength, although no students interviewed could offer a definition that matches expert knowledge" (Placek et al., 2001, p.318).

Muscular strength is defined as the greatest force that a muscle can exert in a single, maximal contraction (Dougherty, 1993). Muscular strength identifies how strong

a person is at that particular time. The more the muscles are used on a daily basis, the greater chance the muscle size will increase and strength will also develop.

Exercises that increase muscular strength may include free weights such as barbells, leg raises, and leg squats. The easiest way to improve muscular strength is with weights while exercising (U.S. Department of Health and Human Services, 2001). If light weights were incorporated into adolescents daily activities, muscular strength will be influenced (Kraemer W.J and Fleck S.J., 1993).

Muscular Endurance

Placek et al. (2001) suggested in their study that a majority of sixth grade students did not understand the term endurance and certainly not muscular endurance.

Muscular endurance is the ability of the muscles to move for long periods of time and it is an indicator of the ability of muscles to do work over time. The longer muscles can perform the greater the endurance (U.S. Department of Health and Human Services, 2001).

Some examples of exercises that work on improving muscular endurance are push-ups for upper body, and curl-ups for abdominal muscles. The number of repetitions indicates the endurance level of that particular muscle.

The more repetitions a muscle can perform in a particular exercise, the greater the muscular endurance.

Flexibility

Even though the students in the study by Placek et al. understood the basic concept of flexibility and were unable to correctly define the term (2001).

The Get Fit Handbook defines flexibility as, "the ability to move your muscles and joints through their full range of motion. Flexibility is beneficial in injury prevention and relaxation" (U.S. Department of Health and Human Services, 2001, p.9). Flexible muscles include the ability to twist, bend, stretch, and reach with ease. Poor flexibility can lead to injuries such as lower back pain and weak shoulder and leg joints that can ultimately continue into adulthood (Dougherty, 1993).

Exercises that may improve flexibility include, hip flexor stretch, sit and reach stretch, and arm stretches. The more stretches performed for particular muscles, the more flexible those muscles will become. Greater flexibility leads to fewer injuries and fewer strained muscles. It is crucial that an exercise video for adolescents incorporate stretching with proper techniques.

Body Composition

Also defined best in The Get Fit Handbook, by the U.S. Department of Health Services, "body composition is the amount of lean body mass, including bones, muscles, organs, and tissues, that the body has in comparison with the amount of body mass which is fat" (2001, p.10). Body composition determines how much lean tissue and how much fat an individual has on their body. It is important that adolescents have the knowledge of their body composition during this stage of growing, since the production of muscle and fat are so great. It can be beneficial to the management of fitness and a healthy lifestyle in the future.

One way to assess percentage of fat is done through the use of skin folds. Skin folds are slight pinches of skin and subcutaneous fat that are measured by an instrument called the skin fold caliper. "By 1930, a special pincer-type caliper was being used to accurately measure subcutaneous fat at selected sites on the body. The caliper works on the same principle as the micrometer and it is used to measure the distance between two points" (McArdle, Katch, F., and Katch V., 1996, p. 555). According to the American Alliance of Health Physical

Education Recreation and Dance (AAHPERD) health fitness standards, two commonly used skin fold sites for adolescents are triceps and medial calf (1988). "The sum of the thickness of these two skin folds are related to the total amount of fat in the body: the thicker the skin folds, the greater the percent of body fat" (Dougherty, 2001 p. 8). "The thickness of the double layer of skin and subcutaneous tissue is read directly from the caliper dial and recorded in millimeters within two seconds after applying the full force of the caliper" (McArdle et al. 1996, p. 555). AAHPERD fitness standards suggest the following ranges of skin fold measurements for boys and girls ages 5 to 18: 1) the sum of skin folds for boys should equal 12 to 25 millimeters and 2) the sum of skin folds for girls, should equal 16 to 36 millimeters (1988).

According to research, during the adolescent period all fitness five components increase (Maia, Lefeure, Claessens, Renson, Vanreusel and Beunen, 2001). It is quite obvious how important each of the components of fitness is in fulfilling the true understanding of a healthy lifestyle. Hopefully, this will help adolescents increase their awareness of what they can do to keep their bodies healthy and strong.

CHAPTER FIVE

GUIDELINES

Adolescent Exercise Video Guidelines

Before using any exercise videos with adolescents, there are some areas of concern that should be evaluated. This chapter discusses the criteria of a good exercise video, the frequency the video should be used, the intensity of the video, and the length of the video.

Warm-Up

A good exercise video consists of a thorough warm-up. Before exercising, it is important to warm-up the body. "Warming-up the body increases the blood flow and gets the muscles and joints ready for exercise and most people are warmed up when they begin to sweat and breathe heavier" (U.S. Department of Health and Human Services, 2001, p. 5). Warm-up exercises may include, walking up and back, marching in place, or stepping side to side. These exercises are simple and are great examples of ways to warm up the muscles, ligaments, tendons, and joints. The Get Fit Handbook states, "warming up makes muscles more limber and decreases the chances of being injured during exercise" (U.S. Department of Health and Human Services, 2001, p. 5).

Five minutes of light calisthenics will allow the body to gradually adjust to the demands of the exercise (American College of Sports Medicine, 1991).

Stretching

Warming-up the body is different from stretching. Stretching should follow the warm-up. When stretching, the video should emphasize the major muscle groups that will be targeted (U.S. Department of Health and Human Services, 2001). Major muscle groups include areas of the legs, back, arms, and chest. According to the guidelines given by AAPHERD, all stretches should be held for a minimum of 10 seconds to be effective (1993). While stretching, it is important for proper technique to be established. The Get Fit Handbook mentions that stretches should be static and not involve any bouncing of the body (2001). Bouncing while stretching may cause injury to muscles, joints, and tendons.

Fitness Routine

Once a series of stretches have been completed, the exercise portion should start at a moderate intensity and gradually increase. Routines should demonstrate some simple movements and slowly develop into more intense steps. Complicated movements are not recommended for

adolescents especially if it is the first time viewing the video. Each movement should be broken down if it requires multiple limbs of the body to be in motion. During adolescence, limbs are still growing and the muscle masses are not yet fully developed to have complete control over arms and legs (Tanner, 1962). With growing limbs and muscles, it is difficult for adolescents to coordinate various movements in a short amount of time (Gallahue, 1982). Therefore, videos that have complicated movements or that are extremely fast paced should be eliminated especially if these are considered to be a beginner level video. "It is clear from the literature that adolescents are more likely to engage in physical activity if they have the fundamental motor capabilities and skills to do so" (Zaichowsky and Larson, 1995, p. 57).

Cool Down

After the exercise routine has taken place, it is necessary to cool down. During cool down, the goal is to return heart rate and breathing to a resting or normal rate. It is common for cool down routines to resemble warm-up exercises but adding more stretches (U.S. Department of Health and Human Services, 2001). Stretches should be done for at least 10 seconds each in order to

increase the flexibility in each muscle. As stated in the warm-up, it is important to stretch the major muscle groups such as quadriceps, hamstrings, calves, arms, chest, and back. Cool down should be a minimum of three to five minutes in length.

Frequency, Intensity, and Time (FIT)

Adolescents need to know how often, how long, and how intense they should exercise in order to increase their personal physical fitness. This concept is also known as the "FITTE" principle including: frequency, intensity, time, type, and enjoyment (American College of Sports Medicine, 2000). This portion of the paper will focus only on the frequency, intensity and time of the "FITTE" principle. Research has shown that an adolescent should exercise three to five days per week, using moderate intensity (President Council on Physical Fitness and Sports, 1998). Moderate intensity exercise will cause the heart and breathing rate to increase. According to research, sustained 20 minute periods of either moderate or vigorous physical activity were relatively rare among adolescents (Sleap and Tolfrey, 2000). Intensity of exercise should progress as levels of fitness increase.

Adolescents need to exercise at an intensity level between 55-90% of their maximum heart rate. Appendix A summarizes how to calculate heart rate range in order to determine an individual's training heart rate. The duration of exercise should be a minimum of 20-30 minutes performed at the recommended 55-90% of heart rate maximum; and progression for individuals will vary (AAPEHRD, 1993). It has been suggested that all cardio respiratory fitness may be improved if a child exercises at 80% of their maximum heart rate on a regular basis (Sleap and Tolfrey, 2001).

Recommendations

After reviewing the literature, it seems that an effective exercise video would be at least 40 minutes long in order to include all of the suggested guidelines. This should allow a proper five minute warm-up, a three minute stretching period, a full 20 minutes of an aerobic routine with a six second heart rate check at the mid-point, a one minute heart rate check at the end of routine, a five minute cool down with a three minute ending stretch plus a three minute review of what the video should have accomplished and the components of fitness used.

CHAPTER SIX

CONCLUSIONS

After reviewing the literature, it is apparent that the majority of exercise videos available for adolescents are inappropriate. Out of the top five selling exercise videos for adolescents on the internet, one video meets most of the criteria for an appropriate activity. Videos that were examined in the fitness circuit for adolescents were not long enough, did not have a proper warm-up or cool-down session, included such complicated movements that the instructor had a hard time explaining them, techniques were old and inappropriate due to the year in which the video was made, there was no explanation of what the exercises were to improve, heart rate was rarely mentioned if discussed at all, and the presentation of the videos was geared toward younger adolescents around 10 years of age. Videos are hard to find for adolescents and picking a video that is safe and appropriate is difficult.

It is crucial that physical educators teaching adolescents become aware or reeducate themselves on the needs of this particular age group. Vital subject areas that should be addressed in daily activities are the five

components of fitness, fundamental motor skills, and the general guidelines for continuous improvement of health. It is important that teachers start with these basic areas and gradually build the base of knowledge for health and fitness. According to the California State Physical Education Fitness Standards, physical educators should be teaching dual and individual activities that students can do to improve their lifelong fitness. Our goal as physical educators is to enhance knowledge and interest in good healthy lifestyles as students continue into adulthood.

A great way to achieve this goal is to relate to the era in which the children are living. What adolescents relate to is technology including television. Why not develop exercise videos that adolescents will enjoy and that are appropriate for the beginning of the process of lifelong fitness? If the instructors teach the basics to students, allowing them to build confidence and to enhance their knowledge and skills, it is more likely students will continue to participate in physical activity.

The research for adolescents is growing and hopefully this project will inspire physical educators to create exercise videos that are appropriate for adolescents. It is important to teach appropriate material to this age

group and maybe it will provide the stability of a healthy lifestyle into their futures.

APPENDIX A:
COMPUTING HEART RATE RANGE

COMPUTING HEART RATE RANGE

STEP 1

Measure resting heart rate while at rest. Find the pulse on the wrist or neck and count the beats for a full minute.

STEP 2

Estimate individual maximum heart rate:

$$220 - \text{age (years)} = \text{Heart Rate Max (HR max)}$$

STEP 3

Compute lower limit for exercising at heart rate range.

$(\text{HR max} - \text{resting heart rate}) \times .55 + \text{resting heart rate}$.

STEP 4

Compute upper limit for training heart rate range.

$(\text{HR max} - \text{resting heart rate}) \times .90 + \text{resting heart rate}$.

Example

A 40-year-old man with a predicted HR max of 180 and a resting heart rate of 60 would have a productive heart rate range (based on 55% and 90% of heart rate reserve) of 126-168 beats/min.

$$\text{Lower limit} \quad .55 \times (180-60)+60 = 126$$

$$\text{Upper limit} \quad .90 \times (180-60)+60 = 168$$

Heart rate is expressed as beats per minute.

Dougherty IV, N.J., Ed. (1993). Physical activity and sport for the secondary school student. American Alliance for Health, Physical Education, Recreation and Dance, Table 4., p.22.

APPENDIX B:
ADOLESCENT EXERCISE VIDEO CHECKLIST

ADOLESCENT EXERCISE VIDEO CHECKLIST

Before viewing the video

1. Is the video certified by a professional association?
Yes _____ No _____
2. Was the video made within the last 5-7 years?
Yes _____ No _____
3. Is the length of the video at least 30-40 minutes?
Yes _____ No _____
4. Is the age group or audience indicated on the video?
Yes _____ No _____

While viewing the video

5. Would the instructor appeal to the audience intended?
Yes _____ No _____
6. Does the video have at least the minimum time suggested in each part of the video sequence:

Intro & Warm-up (3-5 min.)	Yes _____	No _____
Stretching (3 min.)	Yes _____	No _____
Exercise Routine (20 min.)	Yes _____	No _____
Mid exercise routine 6 sec HR	Yes _____	No _____
Check Heart Rate (1 min.)	Yes _____	No _____
Cool down (3 min.)	Yes _____	No _____
Stretching (3 min.)	Yes _____	No _____
Review/Discussion (3 min.)	Yes _____	No _____
7. Were any movements too complicated or out dated?
Yes _____ No _____
8. Were movements too fast or too slow for the age group?
Yes _____ No _____
9. Were fitness components mentioned in the video?
Yes _____ No _____
10. Did the video incorporate any locomotor, non-locomotor, or manipulative skills?
Yes _____ No _____

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