GYMNASTICS MANUAL FOR STUDENT-TEACHERS

by

Maria Ojeda

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in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

Education

APPROVED:

__________________________
Dr. Richard Stratton, Chairman

__________________________  ________________________
Dr. Joseph Franchina            Dr. Margaret Driscoll

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Blacksburg, Virginia
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(ABSTRACT)

The gymnastics manual for student-teachers has been prepared to give the student-teacher the opportunity to get acquainted with gymnastics skills, cognitive information, conditioning exercises, curriculum development, and audiovisual media, needed to teach gymnastics.

Student-teachers' responsibilities and student-teachers' program are discussed. Information is also provided concerning basic material in the school curriculum to get started in the student-teaching experience. The gymnastics section presents detailed description of skills for female and male events, spotting techniques and common errors committed by beginners.

Addresses of companies where audiovisual materials, gymnastics charts and safety information can be purchased, are provided. The Student-Teacher Gymnastics Manual is the beginning of a new wave of educational literature, seeking well prepared professionals in the school curriculum.
I want to thank Mr. and Mrs. Pablo Ojeda, my parents, for their constant encouragement, moral and financial support. Special thanks go to Architect Pablo Ojeda, who designed the manual's cover; to Pablo Turull, for his help during the shooting of the pictures.

Special recognition should also be given to Lisa Boscarino and Alexis Moreno, members of the Puertorrican Gymnastics Team, for assistance with the photographs. An expression of gratitude is given to Professor Tato Velez and to Dr. Jose Portela for lending the facilities at the University of Puerto Rico for the shooting sessions.

I also wish to express my thanks to Dr. Linda Underwood who has influenced my thoughts.

Proudly, I present the Gymnastics Manual for Student Teachers: A different book for a new educational literature.

The Author
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**Table 3.1**  Teaching Strategies

**Table 6.1**  General Mat Information
In recent years physical education has been gaining in importance and taking its rightful place in everyone's life. It has become an integral part of the general education of any human being. Physical education is the way by which an individual may acquire physical and emotional health. It has its place in the school curriculum because students need to gain knowledge in this field just as in any other subject matter.

The physical education curriculum has increased in the last few years, due to the increasing number of sports, one of the most important of which is gymnastics. Gymnastics is a sport that enhances the cardiovascular system, promotes flexibility, coordination, balance, agility, speed, power, timing and strength.

As a new sport, gymnastics is attracting a great number of participants, providing a new source of interest and community involvement. It can be practiced from preschool level to college level, because it benefits all age groups. Because of its importance, there is an increased need for specialized instructors, educational material and audiovisual media. Educational resources that promote qualitative information for teachers and professionals in the field as well as for students with high standards are also necessary.

The physical education teacher must provide the students teaching and material experiences that are necessary for making the physical education class an efficient instrument for conveying information.

Old and new theories of physical education will be presented; new material will be introduced and old material will be reviewed. Future
successful teachers will be the ones who transform any teaching objectives and situations.
INTRODUCTION

The Gymnastics Manual for Student-Teachers has been prepared to give the student-teacher the opportunity to get acquainted with gymnastics skills, cognitive information, conditioning exercises, curriculum development, and audiovisual media, needed to teach gymnastics.

Although the manual has been designed for the student-teacher, it is also useful to teachers, coaches, and parents. Its content has been designed for the beginner's level only, following a simple format.

The manual's content is divided as follows:

A. Student-teacher's responsibilities and a student-teacher's program will be discussed and new ideas will be provided to guide student-teachers toward new teaching-learning experiences. The ideas presented are very general and may not be applicable for a selected number of student-teachers. Its application will depend upon the student-teacher's program policy, school practicum policies, and any other restrictions that may cause responsibilities to change.

B. The facilities and equipment section provides the basic knowledge necessary when dealing with gymnastics facilities and equipment. Certain specifications have been established by the American Association of Health Physical Education and Recreation (1974) and by the United States Gymnastics Safety Association (1977). Again specifications might vary according to student's age and ability levels, as well as school and administrative specifications.

C. The school curriculum section includes the basic material to get started in the student-teaching experience: a lesson plan, a unit
plan, motivational techniques, and teaching strategies. This information will provide a framework that the teacher can use according to individual and group needs.

D. The gymnastics section presents detailed description of skills for female and male events, spotting techniques and common errors committed by beginners. After getting acquainted with the gymnastics skills, the student-teacher will determine which technique best suits the students' needs. Some teachers have their own spotting techniques as well as their own teaching methodology. It is a matter of time and practice How one will teach.

E. Bibliography, audiovisual materials and gymnastics safety information are provided in the appendices. This may serve as background information when seeking new teaching resources. Addresses of companies where audiovisual materials, gymnastics charts and graphs can be purchased, are provided.

The Student-Teacher Gymnastics Manual is just the beginning of a new wave of educational literature. Gymnastics literature will increase within the next few years due to a conscientious effort of many educators for a better field background, seeking well prepared professionals in the educational system.
1 STUDENT TEACHING GUIDELINES
OBJECTIVES OF THE STUDENT TEACHING PROGRAM

1. To provide practical experiences for realistic interpretation and application of educational theory in terms of human growth and development.

2. To provide opportunities for subject matter integration in a classroom teaching experience.

3. To prepare students further, both personally and professionally, to assume their roles as teachers.

4. To provide experiences that will give prospective teachers an opportunity to try out, in practical school-community situations, the pedagogical concepts and skills they have developed.
STUDENT-TEACHER'S RESPONSIBILITIES TOWARD:

Students
1. Comprehend factors involved in their personality development.
2. Diagnose and promote student's abilities.
3. Maintain good relations and group control.
4. Satisfy students' needs and recognize their experiences.
5. Present correct information. References and study materials should be selected and reviewed.
6. Utilize diverse teaching techniques that can promote individual differences.
7. Emphasize the processes of conceptualization, generalization, critical judgment, creation, autoevaluation.
8. Propitiate the effective development of skills, knowledge values, and positive attitudes.
9. Guide and to channel the search for information and investigation.
10. Analyze constructively task accomplishment.
11. Keep records and evidence of task accomplishment.
12. Distribute time adequately.
13. Express instructions correctly and clearly both orally and in writing.

Cooperating Teacher
1. Work in close harmony.
2. Accept suggestions the way they are offered, as alternatives.
3. Present daily lesson plans at least two days ahead. This will give one enough time to receive adequate orientation.

4. Submit tests a week in advance to the cooperating teacher.

5. Consult with your cooperating teacher and have his/her authorization before the realization of any curricular activity.

6. Make up absences as soon as possible according to cooperating teacher's and school supervisor's agreement.

School Principal or School Administrator

1. Collaborate with school's faculty and administrators to maintain group control in the classrooms and school facilities.

2. Collaborate with school activities.

3. Contribute creative ideas; assume and perform responsibilities properly and professionally.

4. Keep him/her informed of student-teaching situations such as special activities, meetings, field days, etc.

5. Return ON TIME all (paper) work that is requested.

With Student-Teacher Organizations

1. Active participation in professional growth activities.

2. Participate in activities, exhibitions and conferences, produced by himself and his classmates during student teaching period.

3. Offer ideas, alternatives and suggestions for improvement of the student teaching experience.
IDEAS THAT CAN HELP ONE GET STARTED IN THE STUDENT TEACHER EXPERIENCE

School

1. Investigate and enter in a professional notebook:
   a. student population
   b. distribution by grade and sex
   c. school policy

2. Special services the school offers to the students:
   a. cafeteria
   b. library
   c. counseling
   d. vocational orientation
   e. recreation
   f. school newspaper
   g. overall physical education facilities
   h. others

3. Composition of school faculty by sex, specialty, and preparation.

Student Teacher's Classroom (See Facilities Section, Chapter V)
   a. Facilities within the room.
   b. Equipment within the room or accessible for use.

What To Observe

1. Students' participation in class and their names.

2. How the cooperating teacher achieves participation from the students.

3. Relationship between group control and learning process.
4. The cooperating teacher's methods to obtain group control.

5. How to handle "out-of-control" groups.

6. How the cooperating teacher introduces the diverses learning techniques and principles.

7. Outside activities or extra-curriculum activities (formal and informal setting).

8. In what school activities do students want to participate?

9. In what other activities, outside the classroom activities, do students like to participate?

10. Teaching techniques: (See Teaching Techniques Section)
    a. review
    b. committee work
    c. discussion
    d. demonstration
    e. others.

11. Techniques and Processes:
    a. steps to follow in a specific moment.
    b. values exploration while in conflict.
    c. values identification and clarification.
    d. evidence importance.

12. Organization, Preparation, Administration and Test Evaluation
    a. tests will measure achievement based upon specific goals.
    b. skilled in grading tests and using them as teaching instruments.
    c. evaluation techniques for motivational purposes.

13. Skill Development
a. Academics - read, listen, visualize, take notes, formulation of relevant questions.

b. Social - planning with others, productively participate in group discussions, lead discussions.

c. Intellectual - observe, describe, define, conceptualize, predict, explain, compare and contrast.

14. Curricular Guides and Daily Plans

15. Texts, Manuals.
SELF EVALUATION CRITERIA

I. The Student Teacher as a Person
   A. Health
   B. Social Maturity
   C. Personal Appearance

II. Professional Development of the Student-Teacher
   A. Professional Attitude, (punctuality, assistance, cooperation, interest, leadership, initiative).
   B. Knowledge about the Students.
   C. Language Ability/Expression of Ideas - oral and written.
   D. Knowledge of Subject Matter. This is very important for the teacher-student relationship.
   E. Planning the Teaching-Learning Process.
   F. Use of teaching techniques and methods.
   G. Use of basic teaching skills.
   H. Use of pedagogical resources. Resources are not the teacher's substitute.
   I. Evaluation.

III. The Student Teacher and Community Relationship
   A. Participation and collaboration in school activities; volleyball tournaments, gymnastics meets, parent-teacher meetings, faculty meetings.
   B. Utilization of community resources, (conferences,
clinics, and/or demonstrations with highly skill athletes in the community).
2 STUDENT TEACHING IN THE SCHOOL CURRICULUM
The unit plan is an organized unit of teaching learning situations of a specific sport's content. It should be:

a. Specific (Comprehend needs and interests of students.)

b. Complete (Includes all lessons meeting daily as well as sequence of skills.)

c. Clear (All work should be typed or printed.)

d. Identify the cognitive, psychomotor, social and affective skills to be learned by the students.

Outline of a Unit Plan

1.0 Theme or point of interest (Title)

2.0 Introduction
   2.10 Rationale (general purpose of topic)
   2.20 Content

3.0 Fundamentals

4.0 Objectives
   4.10 General Objectives
   4.20 Specific Objectives

5.0 Activities
   5.10 Initial activities
   5.20 Developmental activities
   5.30 Final activity

6.0 Problem-Solving Situations
   6.10 Suggested problems to be solved
7.0 Evaluation Procedures

7.10 Objective test and measurements
7.20 Evaluation of activities
7.30 Procedure and rationale for grade assignment

8.0 Resources and Material

8.10 Teacher and student references (Bibliography)
8.20 Audio-visual aids
8.30 Printed materials
8.40 Resource persons from community and/or school personnel
LESSON PLAN (DAILY TEACHING PLAN)

The lesson plan, in addition of being an official proposal of the teacher's work, should be an instrument that will help the student teacher obtain greater achievements in terms of the student's learning experience. It should be a flexible instrument subjected to a continuous process of revision and perfection to reach the goals that it serves.

Independent of adherence to a lesson plan, the teacher should always remember that the importance of teaching is the production of learning.

Function

The primary function of the lesson plan is to help toward an ideal integration of the students' educational experiences. Therefore, the educational experiences can evolve into a coordinated and harmonious form within a desirable mental, social, and emotional environment.

In the lesson plan preparation, the following recommendations should be taken:

1. It should be an integral part of the unit plan.
2. It should be written in a clear, simple, and correct way.
3. It should be considered as the formation of fundamental concepts, habits, attitudes, and ideals.
4. It should offer opportunity for individual differences.
5. It should take into consideration the need for self-justification each moment of the class.
6. It should consider the teaching experience as a continuity of related activities.
SUGGESTED STRUCTURE OF THE LESSON PLAN (DAILY TEACHING PLAN)

I. Date
   A. It indicates work sequence.

II. Activity or Unit
   A. Write down the activity or unit that is taking place. Do not forget the idea of the whole and remember the relationship existent between the theme of the day and the unit.

III. Skill or Theme
   A. Skill or theme the student teacher will discuss according to student's ability.

IV. Objectives
   A. Measurable
   B. Observable
   C. Should always indicate student centeredness.

V. Equipment
   A. List of all equipment needed
   B. Don't forget to mention audiovisual equipment.

VI. Practice (Methodology and/or Procedure)
   The practice, methodology or procedure is the teaching methodology that the student teacher will develop in the class according to the existent methods.
   A. **Initial Activity**
      1. The instructor will capture students' attention.
      2. Stimulus to achieve daily objectives.
      3. Activity variation for more effectiveness.
4. It should constitute a basic and direct step toward the developmental activities.

5. Forms:
   a. Skill explanation.
   b. Skill demonstration.
   c. Past skills review.
   e. Statement of a problem.
   f. Comparison between two skills or class situations.
   g. Some current world occurrence that affects the sport, (Olympic games, Pan American games, etc.).
   h. Situation that leads to curiosity (self-exploration situations, discovery situations, etc.).
   i. Study and/or analysis of any student's work.
   j. Audiovisual resources. (See audiovisual section, Chapter 2 and Appendix C)
   k. Games.
   l. Others.

B. Developmental Activities

1. Constitute the basic lesson plan.
2. Conduct activities that lead to the attainment of objectives.
3. Relationship and sequence of activities.
4. Sequence of problem-solving situations to stimulate the students to comprehend, analyze, synthesize, and evaluate.
5. These are the best activities for the teacher to develop teaching skills, retrocommunication, psychological reinforcement, etc.

6. Offer a variety of activities to maintain attention.

7. Be creative and ingenious.

C. Final Activity

1. In this phase the student teacher will evaluate the degree to which the objectives were attained.

2. The closing activity can be partial: when the students partially understood the lesson, or total: when all the objectives have been attained.

3. Some activities which can be utilized are:
   a. Brief summary from the most important points or aspects of the lesson.
   b. Consolidation of principles, concepts to reach conclusions.
   c. Present a new situation in which the student can transfer previous knowledge.
   d. Individual or group projects within the skill or concept already taught.

D. Assignment

1. It can be by groups, committee, or individual.

2. It should be clear and specific.

3. It should take into consideration individual differences.
4. With the assignment there is an opportunity to develop study habits and give work continuity to the student teacher.

5. It should be explained to the students.

6. It should be discussed for a couple of minutes in the following class.

7. The teacher should write it on the blackboard or use an overhead projector. It should not be dictated.

8. Time should be spent reading part of the assignment.
Example 2.1

DAILY TEACHING PLAN (Lesson Plan)

Activity or Unit: ______________
Skill: ________________________
Date: ________________________
Time Schedule: ______________

OBJECTIVES:

METHODODOLOGY:

Initial Activity:

Developmental Activity:

EQUIPMENT:

Final Activity:

REMARKS: (Personal Evaluation)

Follow-up Activity:

References:
Example 2.2

COURSE OUTLINE

GYMNASTICS

I. Instructor:

II. Description and Purposes:

The gymnastics class will provide each student with the ability to perform the required basic skills on various apparatus and to practice safety rules. Upon completion of the course each student will have knowledge and materials necessary to actively participate in gymnastics.

III. Objectives:

1. To develop an appreciation for the relationship of physical fitness and good body mechanics.

2. To afford each student enrolled the opportunity to become proficient in stunts, tumbling, gymnastics, and spotting.

3. To practice safety in the gymnasium.

4. To exercise and condition one's self for the sport.

IV. Class Requirements:

1. Attendance and participation at each class.

2. Each student will be required to dress appropriately for gymnastics type activities (i.e., warm-up pants, leotards, shorts, etc.).
3. Each student will be required to take a final examination as well as to be evaluated following the completion of each unit.

V. **Class Activities:**

1. Gymnastics history
2. Safety rules
3. Conditioning exercises
4. Parallel bars
5. Tumbling
6. Trampoline
7. Balance beam
8. Vaulting
9. Side horse

VI. **Calendar:**

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<td>August 12-17</td>
<td>Exercise</td>
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<td>August 19-26</td>
<td>Tumbling</td>
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<td>August 31</td>
<td>Practice</td>
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<td>September 2-7</td>
<td>Side Horse and Uneven Bars</td>
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<td>September 9-14</td>
<td>Practice</td>
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<td>September 16-21</td>
<td>Films and Practice</td>
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<td>September 28-30</td>
<td>Routines</td>
</tr>
<tr>
<td>October 5-7</td>
<td>Parallel Bars and Balance Beam</td>
</tr>
<tr>
<td>October 14-November 18</td>
<td>Practice</td>
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<tr>
<td>November 23-30</td>
<td>Class Competition</td>
</tr>
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<td>December 2</td>
<td>Review for final</td>
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COURSE OUTLINE - SYLLABUS AND DESCRIPTION

(See Example #2.2)

The course outline will let the student know:

- objectives
- text and/or teaching aids
- course requirements
- evaluation techniques
- instructor's name
- class activities
- class schedule

In this way the student will be actively involved in the class from the beginning. The student will know class requirements and will be well informed during the class period.

Tentative Course Outline

I. Instructor

II. Description and Purposes

III. Objectives

IV. Class Requirements

V. Class Activities

VI. Class Calendar
TEACHING TECHNIQUES

The school's primary function is to provide an adequate environment for the intellectual, social, and spiritual growth of each student. The teacher is the predominant factor in this environment allowing for the integral growth of the student.

The study and acquisition of teaching techniques are an integral part of all teachers' preparation, in order to facilitate the teaching-learning situation.

Today's modern technological world with color T.V., stereo systems, video games, etc., represent a challenge for today's school system, because it has to compete against them to seek students' interest and attention. Today, more than before, the teacher should utilize a diversity of teaching techniques to enhance the teaching-learning process.

The following teaching techniques may be useful in your class:

1. Committee work
2. Supervised studies
3. Oral questions
4. Written questions
5. Assignments
6. Reviews
7. Field trips
8. Movies
9. Active practice (physical)
10. Panel discussions
11. Debates
12. Forums
13. Role playing
14. Dramatization
15. Conferences
16. Analogies
17. Problem-solving situations
18. Summary
19. In-class reading assignments
20. Oral lectures
21. Discussion according to the individual's point of view
22. Question-Answer sessions
23. Socialized discussions
24. Work group (large or small)
25. Teaching modules
26. Talks with students
27. Learn in couples
28. Dictation
29. Demonstrations
30. Seminars
SUGGESTIONS WHEN SEEKING GROUP CONTROL

1. Start the class when the students get together and are ready to begin.
2. Organize the students so it can facilitate the work without any interruption.
3. Place students correctly; (take into account light, ventilation, etc.).
4. Learn students' names and know some aspects of their lives.
5. Begin daily school work promptly; the students are there to work.
6. Plan carefully, according to group capacities or skill level.
7. Use audiovisual material, still pictures, charts, movies, etc.; make the class interesting and pleasant.
8. Involve all students to obtain the maximum of their abilities.
9. Give the students responsibility.
10. Admire the students' good qualities.
12. Remember that the group's interests should be respected.
13. If you have to discipline a student do it according to the circumstances.
14. Appeal to the students' good characteristics. Punishment is the last resort.
15. Use common sense.
16. Don't use assignments as punishments.
17. Never yell at a student.
18. Develop the students' character.
19. Deal personally with disciplinary problems. The principal's office is for extremely serious cases.

20. Never try to teach in the middle of disorder.

21. Follow all imposed rules; don't forget them.

22. Be prepared before class. Get involved with updated literature.
POSSIBLE MOTIVATION RESOURCES*

1. Still pictures
2. Graphs
3. Charts
4. Drawings
5. Photos
6. Records
7. Tape recordings
8. Movies- 8mm, 16mm
9. Transparencies
10. T.V. Programs
11. Slides
12. Construction paper designs
13. News (sports)
14. Cards with written skills, games, exercises, etc.
15. Demonstrations, clinics and/or conferences with highly skilled athletes or students.
16. Videotape- (own students' film)
17. Others

*See Appendix C.
USE AND FUNCTION OF TECHNOLOGICAL RESOURCES

Some considerations when preparing audiovisual materials:

A. Determine specific ways in which visual aids can help achieve teaching objectives:
   - provide new information
   - review
   - relationship establishment
   - summary
   - association of ideas
   - visualizing an abstract concept
   - present steps to follow in a specific procedure
   - motivation
   - move toward an undetermined action

B. Determine if the visual aid needs a written message. The written message should have the following characteristics:
   1. vocabulary familiar to the audience, (correct spelling)
   2. letters easy to read
   3. letter size according to audience distance and number
   4. word number should be limited, without losing clarity of ideas

C. Determine graphic element:
   - it should be appropriate
   - size should suit audience
   - colors should contribute to make the visual aid effective:
     a. to emphasize
     b. to give balance
c. to establish favorable psychological reaction

d. to get students interested

- be realistic in the graphic selection

D. Determine the "center of interest" of the visual aid. A center of interest can be achieved by using visual elements that attract by:

- color

- size

- texture

- form

- placement of visual aid
CRITERIA FOR AUDIOVISUAL MATERIAL SELECTION

1. Does the audiovisual material help meet teaching objectives?

2. Is the material appropriate for students; age, capacity, experience, interests, and needs?

3. Is the content exact and authentic?

4. Is the content presented in a clear and organized way? Is it easily understood?

5. Is the material in satisfactory condition?

6. Is audiovisual presentation the appropriate way to present the material?

7. What is the technical quality of the material?

Still Pictures

   a. composition and color
   b. perspective, balance, and rhythm
   c. clear and distinctive
   d. defects (stains)
   e. size

Graphs

   a. size
   b. simple-details

Charts

   a. size- Can you see the details?
   b. details- How many?
c. scale- Is it clear?
d. symbols- How many?
e. clear and specific- Is it self-explanatory?

Movies
a. photography- clear and precise
b. composition between scenes
c. sequence
d. narration- Is it clear?
e. sound synchronization

Filmstrip and Slides
a. photography- clear and precise
b. written legend- Is it legible?

Tapes and/or Cassettes
a. Can you hear clearly?
b. rhythm and pace
c. pleasant voice
d. sound effect

Learning Modes
A. Auditory- learning by listening
B. Visual- learning by seeing and/or reading
C. Tactile- learning by touching or writing
D. Kinesthetic- learning by performing
E. Multisensorial- learning by combining diverse modes.
3. TEACHING GYMNASTICS SKILLS
TEACHING GYMNASTICS SKILLS

Instructional strategies in physical education as well as in other educational area have been subject to investigation by motor learning researchers, educators, and psychologists. This section provides a review of teaching strategies literature. Diverse methodologies are presented that may or may not be useful in some teaching settings. The decision of which teaching strategies to be used, may depend upon:

a. own teaching style
b. number of students
c. students' skill level
d. equipment
e. facilities
f. skill to be taught
g. number of spotters available
h. specific behavioral objectives
Table 3.1

Teaching Strategies

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williams, (1964)</td>
<td>&quot;The best method is the one that accomplishes the desired objectives&quot;, p. 375.</td>
</tr>
</tbody>
</table>

B. **Teaching by Task** - teacher explains and demonstrates the task, students are independent to start the task. (individualized learning)  

C. **Reciprocal Teaching** - (use of a partner). The teacher involves partners with a task. One partner supplies information about task's degree of performance.  

D. **Small Group** - more than two people in a group. Each member has a role in the group, there is mutual participation, correction, reinforcement, observation and responsibility.  

E. **Individual Program** - provides the student with self-motivation, self-learning, self-assessment and decision-making.  

F. **Guided Discovery** - teacher presents a series of |
| Johnson, (1968); Farrel, (1970); Locke and Jensen, (1971) | A. **Programmed Instruction** - use of computers, programmed tests, modules, etc. Can control quality and quantity for each student; provides additional instrument to help the student in adapting the pace of the subject matter.  

Siedentop, (1976) | A. **Teacher Directed** - students received predetermined content, by teachers command, at a group pace.  

B. **Individualized Instruction** - students received predetermined sequence of activities at an individual pace.  

C. **Problem-Solving or Inquiry Instruction** - students receive predetermined sequence of general content of task with students creation at a group pace with the teacher as center. |
Table 3.1 Teaching Strategies (Cont'd)

situations (clues) students identify the clues and reach into conclusions.

G. Problem-Solving - teacher presents situations and student is expected to seek out the answer on his/her own.
Table 3.1 Teaching Strategies (Cont'd)

Daughtrey and Lewis,(1979)

A. Formal Approach - everything in class is done according to teacher's command.
B. Informal Approach - individual progress at his/her own rate according to individual's skill level.
C. Compromise Approach - integration of formal approach for some situations.
D. Programmed Instruction - the goal is defined, student progresses at his/her own rate, on a sequence criterion scale.
E. Whole Method - teaching the entire skill from beginning to end. Activity is visualize in its entirety.
F. Part Method - teaching of the skill is more important and should receive emphasis.

Annarino,(1980)

A. Lecture - teacher dictates or presents material. Students record the material and do not usually play an active roll.
B. Drill - repetition of a skill.
C. Humanistic Approach - personalized; teaching learning situation as personal relationship. Advantages in the effective domain.
D. Mastery Learning - student must achieve mastery in one level, before proceeding to another level. Defined in terms of specific objectives.
E. Information Processing - focused primarily on the student's learning process.
F. System Analysis - based on a systematic model that identifies all parts of the instructional process.
G. Teacher Directed - teacher is the center of instruction.
H. Competency Based Strategy - students must achieve certain objectives before proceeding to a determined goal.

Schurr, (1980)

A. Direct Approach - direct dominating role of teacher. Good for beginners.
1. Command - teacher makes all decisions. Students follow durations.
2. Task - teacher determines what and how something is to be done.
3. Guided Discovery - teacher decides the skill to be learned and offers a sequence of tasks where the student is guided toward the answer.
B. Indirect Approach - gives freedom to pupils:
1. Problem-solving - teacher presents a problem, student comes up with one or more solutions.
2. Exploration - based on intrinsic interest in exploring and experimenting.

Singer and Dick,(1980)

A. Humanistic Approach - teacher as a facilitator of learning. Use of positivism, enthusiasm, interaction, etc.
B. Learning Approach - learning processes (i.e., analyze, think, etc.) rather than acquisition of specific skills. Use of self-learning materials, (modules, programmed texts, etc.)
D. Socialization Approach - direct learning experiences to social interaction teaching models.
E. Skill/Knowledge Approach - learning experiences that reflect skill acquisition and emphasize knowledge according to students' capacities and abilities.
Table 3.1 Teaching Strategies (Cont'd)

I. Individualized Instruction -
the student progresses
according to individual
differences in learning
ability.
Bucher and Thaxton, (1981)

A. **Practice Structure** - the structure of the environment to optimize goal attainment.
B. **Mental Practice** - mental rehearsal of skill activity.
C. **Speed and/or Accuracy** - early emphasis on speed is more beneficial, if speed is the prevailing factor in the final performance.
### Table 3.1 (Cont'd)

**EDUCATIONAL GYMNASTICS CURRICULUM**

<table>
<thead>
<tr>
<th>3 to 7 years of Age</th>
<th>8 to 11 years of Age</th>
<th>12-17 Years of Age</th>
<th>18-College</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Basic Motor Skills</strong></td>
<td><strong>1. Provide skills that encourage physical development.</strong></td>
<td><strong>1. Review basic motor skills.</strong></td>
<td><strong>1. Review basic motor skills.</strong></td>
</tr>
<tr>
<td>a. walking</td>
<td>2. Stunts may be used as warm-ups as preparation for performance on apparatus.</td>
<td>2. Review previously taught fundamental skills.</td>
<td>2. Review previously taught fundamental skills.</td>
</tr>
<tr>
<td>d. jumping</td>
<td>b. hang(inverted)</td>
<td>5. Develop spotting techniques.</td>
<td>5. Develop spotting techniques.</td>
</tr>
<tr>
<td>e. climbing</td>
<td>c. support</td>
<td>6. From fundamental skills to more advanced movements.</td>
<td>6. From fundamental to more advanced movements.</td>
</tr>
<tr>
<td></td>
<td>4. Emphasize correct performance on all apparatus (form and technique).</td>
<td>7. Stimulate interest in gymnastics through exhibitions, competitions, films, etc.</td>
<td>7. Stimulate interest in gymnastics through exhibitions, competitions, films, etc.</td>
</tr>
<tr>
<td></td>
<td>5. Emphasize safety in the classroom.</td>
<td>8. Gymnastics class should be varied but not superficial.</td>
<td>8. Gymnastics class should be varied but not superficial.</td>
</tr>
<tr>
<td></td>
<td>6. Develop basic spotting skills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Stimulate interest in gymnastics through exhibitions, competitions, films, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Gymnastics class should be varied but not superficial.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. EVALUATION
EVALUATION

Evaluation techniques in the educational field offer a wide variety of systems to assess skill or knowledge based on predetermined class objectives. Each teacher will decide if the evaluation method to be used will be skill centered (gymnastics stunts) or knowledge centered (history and safety rules). The student teacher should be encouraged to construct his/her own evaluation system of student's work. This is because some established systems may not be stringent enough for skills and/or knowledge evaluation. The main goal of evaluation is to design, adopt, or adapt an evaluation system that provides an objective evaluation of the student's class work. Some evaluation systems will help detect instructional weaknesses and will increase quality in the gymnastic teaching program.

Two examples of skills' evaluation techniques are provided. (See Example 4.1 and 4.2). The choice will be determined by the student-teacher's preference and attitudes.
Example 2.1

**SKILL:**
Basic Positions

<table>
<thead>
<tr>
<th>NAME</th>
<th>FUNDAMENTAL</th>
<th>TUCK or &quot;C&quot;</th>
<th>PIKE or &quot;V&quot;</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 POINTS</td>
<td>3 POINTS</td>
<td>3 POINTS</td>
<td>9 POINTS</td>
</tr>
</tbody>
</table>

Stunts are each rated on a 3 point scale. The scores are then averaged independently/or with scores from the written and/or routine test.
Example 4.2

NAME: 
SKILL: 

<table>
<thead>
<tr>
<th>TOTAL:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill in performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Determination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Form</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

REMARKS:

Stunts are each rated on a 20 point scale. The scores are then averaged with scores from the written and/or routine test.
5. LEARNING FACILITIES AND EQUIPMENT
LEARNING FACILITIES

Learning facilities refer to what physical facilities are available, such as:
- floors
- room space
- space between equipment
- blackboard, bulletin boards, etc.
- ventilation
- electrical fixtures
- walls
- ceilings

"More and more we realize that the environment in which learning takes place can influence that learning..." (AV methods in Education 1982, page 19.1). Learning facilities refer to the physical environment which surrounds the students and teacher when conveying cognitive, motor and affective information.

The student teacher should prepare an environment conducive to learning, more attractive and design factors that will reduce distraction.
EQUIPMENT

The first thing a student teacher should observe when arriving in a gymnastics room is the equipment. The following considerations should be made (see Example 5.1).

A. What equipment is available?
   - Observe mats, female and male events apparatus.
   - Any other equipment that is available.

B. Evaluate the equipment:
   - How old is the equipment?
   - From which company was it purchased?
   - What types of mats are available for immediate use? (consider landing, crash pads, safety and folding mats).
   - Is the beam padded?

C. What is the condition of the equipment?
   - Observe secures (are they rusty, clean, etc.), mats, etc.
   - Overhead spotting belts, safety spotting belts, (are ropes new?).

D. How is the equipment set-up?
   - Is there ample space for skills performance once the female(4) and male(6) apparatus are set-up?
   - How much space is left? (this should not include the safety mats surrounding each piece of equipment). Are Reuther boards in place? Trampoline and mini-tramp set-up?

E. Equipment and space are planned in accordance with type of activity and number of participants

F. What extra equipment is available?
   Look for:
- spotting belts (i.e., manuals, overhead). Amount.
- Reuther boards, spring boards, wood boards. Amount.
- chalk (magnesium carbonate)
- spring floor
- padded beam
- transportation devices for equipment
- safety aids (i.e., hand grips, training pads)
- beginners' training equipment (i.e., low beam, training parallel bars, etc.)
- storage closet or room
- first-aid kit
- cooler or freezer to keep ice
- all types of mats (landing, crash pads, folding and safety mats)
- leotards, shorts, warm-up suits
- Visual materials: i.e., safety rule charts, progressive skills charts, etc.
- audiovisual materials: i.e., films, slides, etc.

Equipment should be in prime condition to avoid the risk of injury.

The following considerations should be made in order to achieve the maximum use of equipment:

- check out equipment before and after any activity involvement (make sure equipment is secure in its supports).
- set-up the equipment according to students' skill level.
- keep equipment clean (avoid excess chalk, sweat, or spilled water from ice trays).
- surround all equipment with safety mats.
- use mats appropriate to each activity (i.e., landing and crash pads for dismounts, any other mat for safety under equipment).
- teach students how to set up equipment. How to secure equipment in their supports; what mats should be placed under each equipment and WHY?

If you don't have a lot of equipment available: MAKE YOUR OWN.

Frederick (1971), in his book 212 Ideas for Making Low Cost Physical Education Equipment, has designed inexpensive homemade gymnastic safety devices and equipment, such as an improvised balance beam, a portable horizontal bar, and a spotting device for tumbling. Homemade equipment is highly suitable for beginners' classes, where the budget is frequently limited.
Example 5.1

Check List

<table>
<thead>
<tr>
<th>EQUIPMENT NAME</th>
<th>Amount</th>
<th>New</th>
<th>Usable</th>
<th>Need Repair</th>
<th>On Hand</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folding mats</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landing mats</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash pads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor mat 40 x 40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring floor</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>High beam</td>
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<tr>
<td>Low beam</td>
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<td></td>
</tr>
<tr>
<td>Padded beam</td>
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<tr>
<td>Low</td>
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<td></td>
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<tr>
<td>High</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uneven bars</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaulting-horse</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Parallel bars</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Training parallel bars</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>High bar</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Adjustable high bar</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rings</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Training rings</td>
<td></td>
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</tr>
<tr>
<td>Pommel horse</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Spring board</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reuther board wood board</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood board</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air board</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual spotting belt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual spotting twisting belt</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Overhead spotting belt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trampoline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mini trampoline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium carbonate</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Example 5.1 (Cont'd)

<table>
<thead>
<tr>
<th>Wick grips</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Suede grips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synthetic grips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>String grips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-aid kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tape (medical)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score keeper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chalk retainers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety pads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulletin board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall charts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Films</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still pictures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light fixtures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric fixtures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store room</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooler or freezer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


6. TEACHING GYMNASTICS SKILLS
BRIEF HISTORY OF GYMNASTICS

Early History
A. Gymnastics was used for centuries as training for combat in many countries such as China, Egypt, Japan, Persia and India.
B. Greeks
1. origin of gymnastics
2. meaning of word in gymnastics is "naked art".
3. exercises were based on natural movements including running, wrestling, boxing, dance and games.
C. Romans
1. Introduced rigid physical training into their military program.
2. Use of a wooden horse to practice mount and dismount.
3. Activities executed while holding a lance.

Middle Ages
A. Period of Ascetism
B. Warrior class—only group participating in organized physical activity.
C. Certain apparatus was used by medieval as well as ancient people.
D. Human towers were performed during public performances.

Modern Times
A. Gymnastics pioneers in gymnastics:
1. Johann Basedow (1712-1790)—first modern writer and teacher of organized gymnastics.
3. Gerhard Vieth (1763-1826)- published an encyclopedia of bodily exercises. Treated vaulting in detail and described side and long vaults.


5. Friederich Jahn (1778-1852)- Father of German gymnastics. Provided for adolescents and adults only. Created the horizontal bar, parallel bars, sidehorse with pommels, balance beam, vaulting bucks, etc.

6. Adolph Spiess (1810-1858)- he added marching and free exercises set to musical rhythms. His book *The Science of Gymnastics* contained graded exercises for boys and girls of all ages.

7. Pehr Ling 1776-1830)- Father of Swedish gymnastics. He stipulated that exercises should be prescribed for the individual. He invented apparatus to fit his theory of individual differences.

8. Franz Nachtegall (1777-1837)- Father of Danish gymnastics. Directed the first training school for teachers of gymnastics.

B. Gymnastics leaders in the USA:

1. Charles Beck (1798-18666); Charles Follen (1796-1840); Francis Lieber (1800-1872)- established gymnastics clubs called "turnvereins".

2. Young Men Christian Association- installed apparatus in the gymnasiurns.

3. American turners organized the normal college of the American gymnastic union 1865.
C. **Organizations**

1. 1890- first gymnastics association founded in Great Britain.

2. 1914- Federation Internationale de Gymnastique (FIG) world-wide governing body was formed.

3. 1950- Gymnastics association change their name to British Amateur Gymnastics Association (BAGA).

4. 1956- First textbook on educational gymnastics by Morrison.
SAFETY

The USA Gymnastics Safety Association has prepared the Gymnastics Safety Manual (1974) in a conscientious effort to assure a safe gymnastics environment in the teaching-learning setting. The manual is directed to all persons engaged in gymnastics activities as instructors as well as participants. The manual is highly recommended, because it offers valuable information that is applicable in the classroom environment.

In general, the student should never attempt an exercise without proper instruction and/or try a harder skill without the teacher's authorization. A PROGRESSIVE teaching system of exercises and skills will minimize considerably the possibility of injury from those movements that require advanced skill acquisition. An appropriate class organization is indispensable. Students who will not follow common sense and exhibit irresponsible behavior will be responsible for injuries caused to others and themselves.

The majority of equipment is height adaptable. The equipment should be lowered for beginners and elevated for advanced work. The students should learn how to elevate and lower the equipment and how to secure it. (This will give them responsibilities.) Therefore, equipment can be adapted to fit individual needs. Mats should be placed around and under each piece of equipment, and according to skill's requirement (i.e., landing mats for dismounts (see Table 6.1).

Safety rules are rules that are applicable to all age groups as well as ability levels. They should be stated at the beginning of the class period and emphasized throughout the duration of the course.
<table>
<thead>
<tr>
<th>Purpose</th>
<th>Length</th>
<th>Thickness</th>
<th>Interior</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be used around and under gymnastics apparatus.</td>
<td>6 inches (15.24cm)</td>
<td>1-1/4 inches (3.18cm)</td>
<td>Two Types:&lt;br&gt; A. A fabric envelope exterior with a cushioning material.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4 inch (0.64cm)</td>
<td>B. Cushion material with a painted exterior.</td>
</tr>
<tr>
<td>Used in the landing areas under or near rings, horizontal bar, vaulting,</td>
<td>8 feet (2.44cm)</td>
<td>3-3/4 inches (9.53cm)</td>
<td>1-1/4 (3.8cm) ± 1/4 (0.64cm) of firm material and 2-1/2 inches (6.35cm) ± 1/4 inch (3.18cm) of a soft material.</td>
</tr>
<tr>
<td>uneven bars, parallel bars, beam.</td>
<td>6 inches (15.24cm)</td>
<td>1/2 inch (1.27cm)</td>
<td></td>
</tr>
<tr>
<td>Used to fill in the areas around the bases of the apparatus.</td>
<td></td>
<td>Equal the height of the base of the apparatus.</td>
<td>Constructed of firm cushioning material.</td>
</tr>
</tbody>
</table>
Safety charts are available from several companies (refer to Appendix B). General safety rules are as follows:

1. Never use any equipment or begin any activity other than warm-up unless instructor or assigned person is present.

2. Always warm-up sufficiently.

3. Wear appropriate clothes.

4. Do not wear jewelry.

5. Keep hair pulled back (away from face).


7. Learn the fundamental (basic) skills before attempting advanced skills.

8. Maintain a safety attitude during class.

9. All ropes and cables should be checked periodically for excessive wear.

10. When possible, use safety devices, such as belts, mats, etc.

11. During the demonstration of each skill, spotting should be explained and stressed.
Spotting can be defined as student's manipulation, by directly using the hands or by using a spotting belt, to avoid the risk of injury and/or help the student to perform a skill. In all hand spotting techniques the spotter should grab the student's upper body whenever the student requires help. The technique's objective is to keep the student's head and shoulder area from touching the mats and/or equipment, because you can manipulate and/or control the student's body a lot easier.

Objective

The main function of spotting is to help the student's performance of a skill. For this to happen the spotter must know the skill to be performed and **HOW and WHEN** to put his/her hands on the student's body. Spotting can help avoid or minimize injury risk. A good spotter will maximize students' security.

Spotting belts are very useful when teaching gymnastics, although some students get very dependent with their use. If the spotting belt will be utilized, the spotter should hold one end of the rope to give enough rope available for the student to perform the stunt. As soon as the student reaches the critical part of the stunt, the spotter should get his/her arm close to the belt as possible, so she/he can obtain a maximum degree of control. Spotting techniques will depend upon:

a. student's ability
b. student's skill level
c. student's body weight
e. skill degree of difficulty

f. availability of equipment (i.e., mats.)
WARM UP SESSION

The warm up session is a very important activity before attempting any gymnastics skill. The warm up is the body's preparation preceding the performance of physical skills. Warm ups can be conducted by: a) the teacher, b) a student/group of students, and c) the teacher and student together. It is a way to get acquainted with the student's ability. Also, it provides an opportunity for class socialization and individual development.

Normally, most of the warm ups for the performance of gymnastics skills, include stretching exercises to loosen up muscles and joints, and some light aerobic exercises (endurance exercises for short-time duration), to warm up the entire cardiovascular system. Stretching exercises must be emphasized because performance of some gymnastics skills requires a degree of muscle flexibility. When stretching exercises are stressed during the warm up period, the result will be fewer student injuries.

Exercise suggestions are offered as a framework or guide for a basic warm up period. Exercises can be varied or can be added to improve warm up efficiency. Later modifications can be made to meet students' needs.
WARM UPS IDEAS

1. Use music while doing the exercises. It makes exercising more interesting and the students will develop a sense of rhythm.

2. Do not conduct the same warm up session every time. Use different warm up formations, such as circle, line, groups. Play games and get the students involved in what you are doing. In other words, have fun while exercising.

3. As an assignment, tell the students to bring a new exercise for the next class period. Tell them to use their imagination.

4. Emphasize the concepts of left and right, up and down, back and forth. especially with younger students. It is a way of instructing while exercising.
WARM-UP EXERCISES

1. Cardiovascular Exercises (short-time duration)
   a. jumping jacks 20 times
   b. run in place and/or around circle 1-2 minutes
   c. jump rope 1-2 minutes
   d. jump in place

2. Trunk rotations: arms extended, from above head around to floor, back to above head - 4 to right, 4 to left.

3. Neck rotations: front and back, side to side, and circles - 4 to each side.

4. Shoulder rotation: one shoulder at a time backward and then forward. Both shoulders rotate simultaneously backward and forward - 4 times for each side.

5. Lounge position to the right side, (open legs, bent right knee, keep left leg straight; rotate the trunk to the right side). Bounce 8 times, then grab ankle while keeping the right knee bent. Then straighten the right knee, trying to place the chest along right leg. Repeat 3 times to each side.

6. Bouncing hands to floor: both feet together: 4 fingertips, 4 knuckles, 4 palms. Repeat 4 times. Open legs and repeat. Then reach head through knees. Repeat 4 times.

7. Wrist rotation: rotate each wrist simultaneously 8 times. Push one wrist with the other repeat 4 times each.

8. Ankle rotations: bring one leg up and rotate the ankle in both directions. Point and flex the toes while maintaining balance with arms - 8 times for each ankle.
9. Waist bounces: bounce 8 times in front, side, back and side. Then bounce to the other direction. Arms rest on waist.

10. Windmills: straddle legs, arms extended to the side. Left hand touches right toe while keeping right arm straight and upward. Keep legs straight throughout the whole movement. Repeat with other foot - 4 times to each side.

11. Arm circles: arms extended to the side, rotate the arms forward and backward, (at the shoulder joint), while keeping them straight - 8 times.

12. Waist rotation: arms extended to the side; legs separated and straight rotate the trunk to the right side and repeat to the left side. Repeat 4 times to each side.

13. Toe stretch: while standing flex right toes and place them on the floor. Push against the floor and release. Repeat with left toes - 4 times each.

**Exercises on the Floor**


15. Variations: while in the butterfly position, bend forward and try to touch the toes; return to original butterfly position by straightening back and bringing head up - 4 times.

16. Hamstring stretch: sit on the floor, legs straight and feet together. Arms extended above head. Touch the toes while keeping legs straight and chin up. Repeat 8-10 times.
17. Variations: grab ankles instead and pull, hold position for about 8 seconds.

18. Straddle sit: bounce to the right, center and left - 4 times to each side.

19. Variations: a) feet flexed, same, 4 times; b) feet flexed, hold position for about 8 seconds, then release.

20. Tuck and roll: tuck legs while lying down on the floor (bring knees to chest), roll forward and backward - 8 times.

21. Bridges: lie on back, place hands flat on the mat, (fingertips pointing toward the hips, like in the back roll), bend legs and place them as close to the hips as possible. Push upward, trying to keep elbows stretched, hold for about 2-4 seconds. Repeat and hold longer - 4 times.

22. Hurdle stretch: straddle sit, bend left leg and place left knee on the floor (keep right leg straight), arms extended above head grab toes in front and hold that position for about 4 seconds. Switch legs and repeat 4 times to each side.

23. Quadriceps stretch: lay down on stomach, bend legs and grab ankles with hands. Pull and hold for 4 seconds. Repeat 4 times each side.

24. Ballet stretch: sit on the floor, keep back straight. Right hand will grab inner (inside) part of the right ankle. Raise the right leg in an upward motion while straightening the knee. Move leg to the side. Switch legs and repeat 4 times each leg.
25. Shoulder stretch: sit on the floor and/or stand. Right arm extended above head, bend right elbow; left hand grabs the right elbow and pulls toward the left shoulder. Repeat with left arm – 4 times each arm.
JOIN THE ARMY

Join the army is a progressive sequence of exercises that, when performed continuously, will improve strength and endurance capacity. The exercises will not take more than 12 minutes at the end of the class. They are easy to do and emphasize individual differences. Variations can be made according to students' age and/or skill level. Do NOT expect the students to perform the exercises correctly from the beginning. Give them time until they get familiar with the exercises. As said before, the exercises are progressive, so it will be a short period of time before you can see the results. The exercises will help the students get in physical condition for gymnastics skills.

<table>
<thead>
<tr>
<th>I. Quantity</th>
<th>Exercise</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Push-Ups</td>
<td>---</td>
</tr>
<tr>
<td>-</td>
<td>Banana (pike)</td>
<td>6 seconds</td>
</tr>
<tr>
<td>3</td>
<td>Push-Ups</td>
<td>---</td>
</tr>
<tr>
<td>-</td>
<td>Superman</td>
<td>6 seconds</td>
</tr>
<tr>
<td>3</td>
<td>Push-Ups</td>
<td>---</td>
</tr>
<tr>
<td>-</td>
<td>Banana</td>
<td>6 seconds</td>
</tr>
<tr>
<td>3</td>
<td>Push-Ups</td>
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</tr>
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<td>-</td>
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<td>3</td>
<td>Push-Ups</td>
<td>---</td>
</tr>
<tr>
<td>-</td>
<td>Superman</td>
<td>6 seconds</td>
</tr>
</tbody>
</table>
II. COUPLES

<table>
<thead>
<tr>
<th>No.</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Legs-Lift/Sit-Ups</td>
</tr>
<tr>
<td>5</td>
<td>Sit-Ups/Legs-Lift</td>
</tr>
<tr>
<td>5</td>
<td>Legs-Lift/Sit-Ups</td>
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<tr>
<td>5</td>
<td>Sit-Ups/Leg-Lift</td>
</tr>
<tr>
<td>5</td>
<td>Legs-Lift/Sit-Ups</td>
</tr>
<tr>
<td>5</td>
<td>Sit-Ups/Legs-Lift</td>
</tr>
</tbody>
</table>

III. 50 Jumping Jacks

IV. 3 Superman II

V. 3 Ice Cream Stretch

Increase exercises' duration and quantity according to students' physical condition. New exercises can be added to this exercise sequence.

Banana (pike)                     Superman

Superman II                      "Ice Cream" Stretch
Following are the lists of gymnastics skills and other pertinent information regarding the teaching of the various skills. When possible, a routine is provided in each event. A simple routine that can be easily learned gives the student initiative, confidence, adjustment, and control. Also, a routine help students to work with skill sequence and continuity. Each routine can be easily modified to include more difficult skills. Remember, that during the demonstration of each skill, spotting should be explained and stressed.
SPECIFIC SKILLS TO BE DEVELOPED IN THE BEGINNER'S LEVEL

1. landing (ankle, knees, shoulders)
2. Static Positions (posture and balance)
3. Swing
4. Rotational Movements
5. Spring (hips, knees, shoulders)
6. Flight and Height
BASIC ELEMENTS

Basic Positions Terms will be used throughout the entire skill descriptions as reference.

I. Fundamental Position or Extended

Begin in a standing position. Place both feet together, knees straight, arms extended in sagital plane. Head, shoulders, back, hips all aligned in the vertical position as straight as possible (shoulders elevated as high as possible or as close to ears as possible).

II. Tuck or "C"

Begin in a sitting position. Bring thighs as close to your chest as possible. Flex your knees. Bring your heels as far back as possible (close to your gluteus area). Hollow your chest, (hunch your back). Head faces your knees and chin join chest. Arms grab shin. Elbows close to the body.

III. Pike or "V"

Begin in a sitting position. Legs extended and together. Point toes. Head, shoulders, and back aligned in a vertical position with hips. Arms can be extended forward, in a lateral and/or upright position, or used as support. Arms may be placed in any position and way, because the "V" position is assumed when the legs and upper body are in an angle from 1° to 179°. (Diagram 6.1).
Variations: Pike can be performed in all planes of movement, (i.e., standing, laying down, etc.).

IV. Straddle

Begin in a standing position. Head, shoulders, back, hips and legs aligned in a vertical position. Legs must be separated. There is no specific range or degree of separation between the legs. This separation can range from 1 to 185°. Due to anatomical impositions of hip-leg articulation, the straddle position cannot be executed over 185°.

Variations: Straddle position can be performed in all planes of movement.
STATIC POSITIONS

For these skills descriptions a right handed person will be used therefore, change descriptions according to each student's need.

Definition: Static positions are positions that maintain a balance, that are steady or have movement for a limited period of time (i.e., two to three seconds max.).

I. Front Scale

Begin by standing on right foot. Elevate left leg straight backward and upward pointing toes. Heel and head (nape of the neck), are aligned. Maintain chest as high as possible (without interrupting head and heel alignment). Place arms horizontally or perpendicularly to the head and body to maintain balance. Focus on a specific point.

II. Side Scale

Begin by standing on right foot. Elevate left leg straight, sideways, and upward pointing toes. Heel and head, (nape of the neck), are aligned. Maintain chest as high as possible, (without interrupting head and heel alignment). Place arms vertically, perpendicularly and/or horizontally to head and body to maintain balance. Focus on a specific point. Keep chin separated from body.

Variations: Arms can also be placed by extending the right arm straight overhead, with should as close as possible to your right ear. Left arm abducted (close to the body) against left hip and thigh.
III. Straddle Position

Begin in a standing position, legs straight and separated approximately 2 feet apart. Upper body must be flexed at the hip joint at $90^\circ$ (or upper body parallel to the floor or mat). Arms extended sideways, perpendicular to the body and parallel to the floor or mat. Keep chin separated from the body. Focus eyes on a specific point.
SALTOS

Definition: Explosive movements in which the body is lifted from the ground or surface were situated.

I. Salto in an Extended Position

Begin in a standing position with legs together and arms to the side of the body, by flexing hips, knees, and ankles simultaneously (until you assume a 90° angle on the back of knee articulation; hamstring-knee joint-gastrocnemious angle). Keep arms straight and backwards parallel to the body. Then by reversing the arms' movement, swing arms forward, in an upward motion, while extending first hip joint, knee joint and then ankle joint, toward a total extension (lifting the body vertically from the ground or surface). This is known as jump or "salto" in an extended position.

II. Salto in Tuck Position

Begin in a standing position with legs together and arms to the side of the body, by flexing hips, knees, and ankles simultaneously (until you assume a 90° angle on the back of knee articulation; hamstring-knee joint-gastrocnemious angle). Keep arms straight and backwards parallel to the body. Then by reversing the arms' movement, swing arms forward, bring legs up, flexing knees and maintaining the extension in the ankle while bringing thighs to the chest and lowering your arms sidewardly, grabbing and pulling shins back (pressing thighs against chest). Release shins immediately after reaching maximum height and land in a standing position.
III. Salto in Pike Position

Begin in a standing position with legs together and arms to the side of the body, by flexing hips, knees and ankle simultaneously, (until you assume a 90° angle on the back of knee articulation; hamstring-knee joint-gastrocnemious angle). Keep arms straight and backwards parallel to the body. Then by reversing the arms' movement, swing arms forward, bring legs straight forward and upward to a 90° angle (with upper body). Keep head, shoulders and back aligned in a vertical position, perpendicular to the legs. Point toes with ankles extended. Arms are maintained in an extended position and are brought forward and downward trying to touch the toes without breaking head, shoulder, and back alignment. Return to normal standing position by extending hip joint (lowering legs) and landing with arms straight up. Lower arms to normal standing position.

IV. Salto in Straddle Position

Begin in a standing position with legs together and arms to side of the body, by flexing hips, knees, and ankles simultaneously, (until you assume a 90° angle on the back of knee articulation; hamstring-knee joint-gastrocnemious angle). Keep arms straight and backwards parallel to the body. Then by reversing the arms' movement, swing arms forward, raise legs diagonally straight and upward, (legs must be separated approximately 2 feet), point toes and extend the ankle joints. Keep head, shoulders, and back aligned with the hips in a vertical position and perpendicular to the legs. Arms are kept straight and are lowered diagonally parallel to the legs, trying to touch the toes without breaking head, shoulder, and back alignment. Return to normal standing position.
position by extending hip joint (lower the legs and simultaneously bring them together and land with arms straight up, then lower the arms to a normal standing position).
Diagram 6.1

Pike = 1° to 179°
Straddle = 1° to 185°
FLOOR EXERCISE

1. Physical Characteristics
   a. 12m x 12m square carpeted
   b. area can be constructed of:
      1. mats
      2. long roll down strips
      3. joined squares

2. Background
   a. standardized in 1950
   b. music in 1950 (girls)

3. Skills
   a. forward roll series
   b. backroll series
   c. saltos
   d. fundamental positions
   e. cartwheel
   f. round-off
   g. handstand
I. **Forward Roll** (bent knees)

Starting from a normal standing position, (extended position) the student will assume a tuck position on his/her feet, placing the heel of the hands flat on the mat at approximately 8 to 10 inches in front of the toes. Keep knees together. Raise the hips up to reach a full leg extension. Bend elbows, lower the upper shoulder area, and tuck the head in at the last moment. Place the back of the upper shoulder area on the mat and roll over on your back (NEVER PUT THE HEAD DOWN ON THE MAT). Bend the legs until the hips touch the mat. Maintain the tuck position throughout the whole movement until hips touch the mat. With the help of one's hands, by grabbing the shins, reach forward to continue the movement sequence that leads to the initial tuck position. Then raise to normal standing position.

**Variations:**

**Forward Roll** (legs straight)

Starting from a normal standing position (extended position), the student will assume a tuck position on his/her feet, placing the heel of the hands flat on the mat at approximately 8 to 10 inches in front of the toes. Keep knees together. Raise the hips up to reach a full leg extension. Bend elbows, lower the upper shoulder area, and tuck the head in at the last moment. Place the back of the upper shoulder arms on the mat and roll over on your back (NEVER PUT THE HEAD DOWN ON THE MAT). Keep legs as straight as possible until hips touch the mat. Tuck legs in with the help of one's hands, by grabbing the shins, reach
forward to continue the movement sequence that leads to the initial tuck position. Then, raise to a normal standing position.

**Common Errors**

1. Incorrect hand placement.
2. Failure to tuck head, bend arms and place the shoulder area on the mat.
3. Placing the head on the mat.
4. Failure to maintain the tuck position.

**Spotting**

The spotter should stand at either side of the performer from the beginning of the skill. As the performer begins the forward roll, the spotter should place one hand on the performer's head and the other hand on the performer's thighs. The spotter gently pushes the performer's head into a tucked position and holds the thighs down. Then, release the performer and grab the student's waistline with both hands to lift the performer into the final squatting position.

**Front Straddle**

Starting from a straddle position, flex hip joint until hands have been placed flat on the mat at approximately 8 to 10 inches in front of the line of the toes. Bend elbows, lower the upper part of the shoulders, and tuck the head in. At the last moment place the back of the upper shoulder area, on the mat roll on your back maintaining the
straddle position (NEVER PUT THE HEAD DOWN ON THE MAT).

(Legs straight and wide open), throughout the whole movement. As soon as the hips contact the floor, place the hands between the legs, (as close as possible to the body), with the fingers pointing forward. Immediately lean the upper body forward (keep head tucked in), and push downward with your arms and fingers to assist in pushing to assume the initial standing position.

Common Errors
1. Flexion of the legs throughout the movement.
2. Flexion of the ankle while sitting on the mat. Stops the performance.
3. Placement of the head on the mat and/or tucking the head in too soon.
4. Incorrect placement of the hands on the mat.
5. Lack of push-off from the mat.
6. Lack of upper body inclination.
Spotting

The spotter should stand behind the performer from the beginning of the skill. As the performer begins the forward roll, the spotter must prepare to spot by getting closer to the performer (but not impeding performance). As the performer places the back of the upper shoulder area on the mat, the spotter should squat behind the performer. When the hips touch the mats and the upper body area leaves the mat, the spotter then will grab performer's waistline with both hands and pull and push the performer in an upward and forward motion, respectively. Then return to initial normal standing position.

II. Back Roll

Starting from an extended position, the student will assume a tuck position on his/her feet. (Mat will face the student's back). The hands will be placed over the shoulders, with the palm of the hands up and close to the neck. Keep thighs close to the chest as possible, tuck head in. While maintaining the head position, roll backward over the gluteus and back area keeping the head tucked in and thighs as close to the chest as possible. As soon as the shoulder area makes contact with the mat, place palm of the hands flat on the mat, (fingertips pointing toward the hips) and push-off forcefully to come to a squat position by extending the elbows and by keeping them close to the head, (therefore liberating the head from body weight pressure). Knees should never touch the floor throughout the movement. The student will raise from the tuck position and will assume the initial extended position.
Common Errors

1. Lack of good hand placement in the initial tuck position.
2. Lack of maintaining a tight tuck position throughout the whole movement.
3. Failure to push-off from the mat as hips pass over head.
4. Lack of head tuck in (leads to turning the head sideways).
5. Pushing with one hand more than with the other (leads to a crooked roll).
6. Putting the knees down instead of the toes before completing the backroll).

Back Straddle Roll

Starting from a straddle position, flex hip joint until hands have been placed flat on the mat as far back between the legs as possible. Fingers should point to the back to absorb the momentum generated from the falling action. Let the body fall backwards assuming a momentarily sitting position. Roll over the gluteus and back area, keeping the head tucked in and shifting the hands (from between the legs) over the shoulders with palm of the hands up and close to the neck, (fingertips pointing toward the hips). While bringing the legs up and back and maintaining the straddle position, (legs straight and wide open), point toes and push-off forcefully, to liberate the head from body weight pressure, by extending the elbows and by keeping them as close to the body as possible. Maintain the force throughout the whole movement until you have assumed the initial straddle position.
Common Errors

1. Failure to keep the legs straight throughout the skill.
2. Beginners tend to fall abruptly during the initial fall, (lack of arm support).
3. Lack of good hand placement throughout the skill.
4. Failure to push-off from the mat as hips pass over head.
5. Pushing with one hand more than with the other (leads to a crooked roll).

Spotting

The spotter should stand at either side of the performer from the beginning of the skill. As the performer begins the roll, the spotter prepares by getting closer to the performer (but not impeding the performance). As soon as the performer places the gluteus and back area on the mat, the spotter will squat next to the performer. When the shoulder area makes contact with the mat and the gluteus and back area start leaving the mat. The spotter should grab the student's waistline with both hands and pull the performer in an upward and backward motion to return to the initial extended position.

III. Handstand

Start with the extended position. Take one step forward with the right leg; flex the knee of the right leg (lounge), while flexing the waistline. Place both hands on the mat, (fingers pointing forward), one shoulder width apart. Kick back and upward with the left leg straight. Push-off simultaneously with the right leg to reach an inverted vertical position. Keep legs, hips, back, shoulders, and head aligned while in
handstand by tightening the abdominal muscles, gluteus muscles, leg muscles, quadriceps and hamstrings) and arm muscles. Eyes must focus between the hands (center of gravity). The performer must lower one leg at a time and push-off with both arms to assume the extended initial body position. Leg alternation can vary according to the performer.

Common Errors
1. Beginners don't place the hands on the mat, (they dive to the mat) or/and anticipate leg movements.
2. Not enough kick or push from either leg, (leads to an incompletely handstand).
3. Excessive arch on the back while in handstand (wrong body alignment).
4. Elbows bent while in handstand (leads to falling on the face).
5. Improper arm position (arms too wide apart or too close together).
6. Wrong eye focus, (focus on wall or other performers).
7. Hands too close or too far from the feet during the beginning of the skill.

Spotting
The spotter must stand next to the performer and separate legs one shoulder width apart for better balance. As soon as the performer kicks his/her leg back and upward the spotter must grab the lower thigh area (above the knee). The spotter has to wait for the other leg to come up and grab both. He/she then releases the performer's legs, one at a time, to allow him/her to return to the original extended position.
IV. Cartwheel

The student starts with the extended position. He/she then takes one step forward with the right leg and flexes the knee of the right leg (lunge), while flexing waistline. His/her arms must be extended overhead. Then the student must place the right hand 40-45 degrees to the right, fingers pointing to the right and the left hand, a shoulder width apart, parallel to the right hand (draw or imagine a vertical line on the mat) on the vertical line also, by turning the hand 40-45 degrees to the right (fingers pointing to the right. He/she must keep arms straight. Simultaneously, he/she will forcefully kick the left leg straight, back, and upward and forcefully push with the right leg. Then he/she will straddle his/her legs (legs separated and straight) to assume a momentary handstand, (sideways, through the vertical line.

The eyes should be focused on the hand placement. As the body reaches the handstand, the student will push-off with the right hand, placing the left foot on the mat (by slightly bending the knee) and placing the right foot on the mat, assuming a lunge position, keeping the arms extended overhead throughout the skill. The rhythm for a cartwheel is hand, hand, foot, foot.

Common Errors
1. Beginners don't place the hands on the mat, (they dive to the mat).
2. Not enough kick from the back leg or enough push from the front leg, (this leads to an incomplete handstand).
3. Excessive arch on the back (wrong body alignment).
4. Elbows bend while in handstand.
5. Improper arm position (arms too wide apart or too close together).
6. Wrong eye focus.

7. Hands too close or too far from the feet during the beginning of the skill.

8. Failure to place hands in the correct order.

9. Failure to separate legs while in handstand.

**Spotting**

The spotter should stand next to the right side of the performer. As soon as the performer initiates the lunge position the spotter places his/her right hand on the student's waistline. As the performer kicks the back leg back and upward, the spotter places his/her left hand on the left side of the student's waistline (under the right hand when crossing hands). Following the student's performance, as both legs are placed on the floor, the performer returns to lunge position and releases both hands.

V. Round-Off

The student starts with the extended position. He/she will take one step forward with the right leg and flex right knee (lunge) while flexing waistline. His/her arms should be extended overhead. Then the performer must place his/her right hand on the mat, by turning the hand 40-45 degrees to the right (fingers pointing to the right). Then he/she will place his/her left hand, one shoulder width apart, parallel to the right hand (draw or imagine a vertical line on the mat) on the vertical line also, by turning the hand 60-65 degrees to the right and slightly bending the left elbow. Simultaneously, she/he will forcefully kick the left leg straight, back, and upward and forcefully push with the right
leg, bringing both feet together to assume a momentary handstand (sideways through vertical line). The eyes should be focused on hand placement. The performer must make a half turn (180 degrees) clockwise with hips and legs. While in this position, he/she will pike the legs at the hip joint and bring legs down together, simultaneously pushing off forcefully from both hands at the same time (keep arms extended overhead). Then she/he should return to the basic extended position.

VI. Tripod

Start with an extended position. The performer will assume a squat position. The performer will place the hands shoulder width apart (flat) with the fingers pointing straight ahead. The hands should be placed at approximately 8 to 10 inches in front of the toes. The knees are spread wide open and the arms should be placed between them. The student will lean forward, bending at the elbows, and by placing the inside of the knees against and slightly above the outside of the elbows. The performer should continue to lean forward until the feet come off the floor and the forehead rests on the mat. The performer should be able to balance in this position by distributing his/her weight throughout the hands and head.

**Common Errors:**

1. Wrong placement of hands and head, (improper base formation).
2. Chin tuck in (leads to a forward roll).
3. Failure to tighten leg muscles.
Headstand from Tripod

From the tripod position, the performer should kick upward one foot at a time. Maintain balance with the back slightly arched, legs straight and together and toes pointed. Body weight should be distributed throughout the hands and head. To release this position, the performer should push with the hands, tuck the head and roll forward, or step down one foot at a time.

Common Errors:
1. Wrong placement of hands and head.
2. Legs extension too fast.
3. Wrong body alignment.
4. Hands too far away from toes.
5. Not tightening leg and arm muscles.
6. Chin tuck in while performing the skill, (leads to a forward roll).

Spotting
A. Spotter may grasp the performer's legs and assist the performer to the proper position for the balance.
B. Spotter may place one hand on the performer's back and the other hand controlling the legs to assist the performer to the proper position for the balance (excellent when working with young children and/or light weight performers).
ROUTINES

Floor Exercise

1. Forward roll
   Straddle salto
   Scale
   Handstand to forward roll

2. Straddle forward roll
   Straddle backward roll
   Straddle salto to both fee together
   Round-off
   Cartwheel

3. Handstand
   Backward roll in straddle
   Tuck salto
   Round-off
   Straddle salto
   Carwheel
1. **Physical Characteristics**  
   a. 5m long (500cm long)  
   b. 10cm wide  
   c. 16cm dept  
   d. made of various pieces of laminated wood  
   e. beam is covered with a chamois sleeve

2. **Background**  
   a. specifically designed for women  
   b. appear in 1951  
   c. olympics in 1952  
   d. up to 1975 surface was bare wood  
   e. 1976 beam is covered with a chamois sleeve

3. **Skills**  
   a. front support mount  
   b. walk - toe - heel  
   c. dip-walk forward  
   d. step - kick walk  
   e. half turn  
   f. forward roll  
   g. scale  
   h. dismounts
I. Front Support Mount

The student will start in a standing position in front of the beam, about one (1) foot apart (both feet together). He/she will then place hands flat on the beam, grabbing both sides of it and bending knees slightly, jump forward and upward onto the beam. Then he/she will place hips joint on the beam keeping both feet together, pointing toes, keeping arms straight and head up and back (arch back). His/her eyesight should focus on a specific point. Simultaneously he/she will tighten back, gluteus, and legs muscles. He/she should return to the basic fundamental position by flexing elbows and by jumping off the beam, bringing legs down, pushing off from hands and shoulders, and landing with both feet together and knees slightly bent to absorb the force of the fall.

Common Errors

1. Beginners tend to jump very hard (leads to hard hitting of the beam).
2. Failure to focus on a specific point (not maintaining balance).
3. Head down (fall forward).
4. Arms bent (fall forward).
5. Failure to tighten muscles (not keeping the correct position, i.e., legs down).

Spotting

The spotter should stand on the opposite side of the beam, in front of the performer. The beam should be between spotter and performer. While standing, the spotter should place his/her feet in a lounge
position (legs separated, body weight supported on one leg, front knee bent).

The spotter's arms should be extended straight forward (parallel to the shoulders), hands should be flat, and palms should be placed on student's shoulder to prevent falling forward after the student has jumped and placed his/her hip joint on the beam. When the student has control of his/her body, the spotter can move to the side of the performer and correct errors.

II. Walk-Toe-Heel

The student should be placed on the beam, his/her arms extended sideways, parallel to his/her shoulders. The performer's eyesight should focus on the end of the beam. He/she will then start walking by placing toes first and heels second. The student ought to emphasize good body alignment (head, shoulders, hips and legs, and good posture while walking.

Common Errors
1. Failure to focus on a specific point.
2. Failure to begin walking by placing heels first.
3. Failure to maintain arms sideways for balance.
4. Failure to maintain body alignment.

Spotting

The spotter may walk next to the students, but on the floor by grabbing his/her hand or by just standing there for security, to avoid falls.
Variations:

Toe Heel Backward Walk

This repeats the same movement as toe-heel walk, but backwards.

III. Dip-Walk Forward

The student begins by standing on the beam assuming a basic fundamental position, arms extended to the side and parallel to the shoulders. His/her eyesight should focus on the end of the beam. He/she will take a toe-heel step (refer to toe-heel walk), and then immediately bend right knee slightly, bringing the left leg straight forward by passing through the side of the beam (without touching it) and by pointing left toes throughout the skill. The student will place his/her left foot in front of the right foot in a toe-heel movement and repeat the same movement with left foot.

Common Errors

1. Failure to focus on a specific point.
2. Failure to bend knee (standing) while passing the other leg through the side of the beam.
3. Failure to maintain good body alignment.

Spotting

The spotters may walk next to the student, but on the floor by grabbing the performer's hand or by just standing there for security, to avoid falls.

IV. Step Kick Walk

The student stands on the beam, assuming the basic fundamental
position, arms extended to the side. His/her eyesight should focus on a specific point (end of beam). He/she will then make a toe heel step with right foot and then bring the leg straight forward in an upward motion (as if kicking a ball in front). He/she will then repeat with left leg.

**Common Errors**

1. Failure to focus on a specific point.
2. Failure to keep knees straight throughout the skill.
3. Failure to point toes.
4. Failure to maintain good body alignment.

**V. One-Half Turns**

The student will stand on the beam assuming the basic fundamental position, arms extended to the side (parallel to the shoulders). He/she will place right foot in front and keep eyes focused on the end of the beam. The performer must raise heels up and start turning to the left, using the toes as fulcrum. While turning he/she must keep head, shoulders, and hips aligned and switch eyesight from one end of the beam to the other end.

**Spotting**

The spotter should do the following:

1. Stand next to the performer's side (on the floor) grab one of the performer's hands and, as soon as the performer starts turning, switch and grab the performer's other hand, to assure the whole movement; or

2. Stand next to the performer's side. Grab performer's waistline and
continue turning the performer throughout the skill. This is excellent when working with little children (elementary school age children) because it gives them security.
ROUTINES

Balance Beam

1. Front support mount
   Scale
   Dip walk forward
   Toe touch dismount

2. Front support mount
   Walk backward
   Forward roll
   Straddle touch dismount

3. Front support mount
   Walk with half turns
   Scale
   Dip walk forward
   Round-off dismount
UNEVEN BARS

1. Physical Characteristics
   a. top Bar - 2.3m from the floor = (230cm)
   b. lower Bar - 1.5m above the floor = (150cm)
   c. adjustment - = 10cm
   d. width - 2.4m
   e. width but not height may be adjusted.

2. Background
   a. derived from the men's parallel bars in 1951
   b. olympics in 1952.

3. Skills
   a. front support mount
   b. cast
   c. back hip circle
   d. single leg shoot through
   e. mill circle
   f. sole circle dismount
   g. back hip pullover.
I. Grips
A. Regular Grip
   Holding the bar with the thumb underneath and fingers on top.
B. Reverse Grip
   Holding the bar with the fingers underneath and the thumbs on top.
C. Mixed Grip
   Holding the bar with one hand in a regular grip and the other in a reverse grip.

II. Skills
A. Front Support
   Facing either way on the low bar. The student will grab the bar with the regular grip then jump into the bar, arms straight, elbows locked. He/she should point toes, straighten knees, and keep head up. To return to the original position, he/she must flex elbow and bend knees when landing and then release the bar.

Common Errors
1. Failure to lock elbows while in support.
2. Failure to jump high enough to reach the bar.
3. Failure to keep body straight.
4. Failure to keep head up.

Spotting
   The spotter should stand behind the performer and grab student's waist with both hands and assist in jumping to the bar.
B. **Back Pullover**

The performer should stand on either side of the low bar, grabbing the bar using the regular grip and bending elbows. He/she should then kick with the right leg while pushing off the surface with left leg (the student can take off, either both feet together or one after the other). He/she will bring hips close to the low bar by assuming a pike position at the hip joint and by pulling continuously from the arms, allowing head and shoulders to rotate backwards. He/she will then assume a front support position. The performer can return to the original standing position by flexing the elbows and bending the knees when landing, then releasing the bar.

**Common Errors**

1. Beginners straighten the elbow keeping the hips from getting close enough to the bars.

2. Lack of enough kick during take-off.

3. Rotating around the bar instead of finishing in front support.

4. Failure to bring head and shoulders backwards.

**Spotting**

The spotter must stand to the right side of the performer in front of the low bar, placing his/her left hand on back of the performer and right hand on the back of performer's upper thighs (hamstring muscles), keeping hips close to the bar throughout the whole move after the performer has started the movement.

C. **Cast**

The performer will assume a front support position on the low bar
refer to front support description). Then he/she will move his/her legs under the bar (slight pike at the hip joint) and flex arms enough so the low bar can be accommodated at the hip joint while in pike position. He/she must keep the head up and hollow the chest. Then the student should bring his/her legs back forcefully and separate his/her hips from the bar and straighten his/her arms. The shoulders should move forward over the bar. Then the student should return to the front support position.

**Common Errors**

1. Failure to assume the position.
2. Failure to place bar at the hip joint during pike position.
3. Failure to kick legs backward vigorously.
4. Keeping arms bent throughout whole movement.
5. Failure to place shoulders over bar.

**Spotting**

The spotter should stand to the right side of the performer between the bars. Then he/she must grab the performer's right wrist with the right hand. As soon as the performer separates the hips from the bar, the spotter will place his/her left hand on the performer's lower abdominal area. In this way the spotter will control the hand's grip as well as the body.
D. Back Hip Circle

The cast is a preparatory exercise for the back hip circle. The performer will assume a front support position and perform a cast. After bringing legs backward forcefully he/she will come into the bar (keeping arms and body straight), contact the bar with hips, allowing head and shoulders to rotate backwards. Then he/she will circle backwards around the bar (keeping hips close to the bar throughout the skill), returning to a front support position.

Common Errors

1. Failure to maintain hips close to the bar throughout the whole movement.
2. Failure to keep arms straight throughout the rotation around the bar.
3. Lack of a tight body.

Spotting

The spotter should stand to the right side of the performer in front of the low bar. As soon as the body returns from the cast position, the spotter will place his/her right hand on the performer's upper thighs (hamstrings) and left hand on the performer's back. In this way, the spotter will help rotate the body around the bar and will keep hips close to the bar. When the performer has almost completed the rotation, the spotter should switch hands by placing the left arm on the performer's back (to stop rotation) and grab performer's right waist with the right hand. Ideally, this skill should be spotted by two spotters.
E. Single leg shoot through to a stride position

From a front support position, the performer will bring his/her legs backward, keeping arms straight and chest hollow. When the body is in a cast position (away from the bar, refer to cast description). The student must pike at the hip joint; lift hips up, bend right knee while (separating it from left leg) and passing it through over the low bar. He/she must keep the left leg straight. The low bar will be placed between both legs (stride position).

Common Errors

1. Failure to pike while in cast position.
2. Failure to bring hips up and bend the knee simultaneously.
3. Failure to hollow chest.

Spotting

The spotter should stand to the left side of the performer between bars. When the performer's body is in the cast position the spotter will place his/her left hand on the performer's left wrist and his/her right hand on the performer's left thigh, above the knee. In this way the spotter will control hand grip and body position.

F. Mill Circle

The performer must assume a reverse grip from a stride position (with the right leg forward). Then he/she will push downward with his/her arms lifting legs from the bar. Then he/she will assume a pike position by bringing right leg straight up (point toes). Then the student should incline the upper body forward, keeping the pike position and bringing the left leg up by opening the split, allowing the body to
rotate around the bar. As the body rotates, he/she will keep rotating the hand grip by moving wrists forward, keeping legs apart throughout the skill. As the upper body returns to the original stride position the student will open to the pike position.

**Common Errors**

1. Failure to maintain pike position throughout skill.
2. Failure to maintain a tight body.
3. Failure to lift legs off the bar.
4. Failure to rotate hand's grip while rotating the body.

**Spotting**

The spotter must stand to the right side of the performer, in front of the low bar and place his/her right hand on performer's back. As the performer's body rotates the spotter must place his/her left hand on the performer's back (around waistline) and shift the body from in front of the low bar to between the bars, for best performer's body control.
ROUTINES

Uneven Bars

1. Front support mount
   Cast
   Back hip circle
   Cast
   Single leg shoot through

2. Back pullover mount
   Cast
   Single leg shoot through
   Mill circle
   Cast to front support

3. Back pullover mount
   Cast
   Back hip circle
   Cast
   Single leg shoot through
   Mill circle
VAULT

1. Physical characteristics
   a. height adjustable to a maximum of 120 cm
   b. length adjustable to a maximum of 162 cm
   c. smooth leather covering

1.1 Springboard
   a. made of wood
   b. made of springs
   c. airboards

2. Skills
   a. running phase
   b. approach to board phase
   c. contact with board and take off phase
   d. support on the horse phase
   e. squat vault
   f. straddle vault
TeachingHints

1. When working with small children (i.e., elementary school children), use wood boxes or two folding mats (one on top of the other).

2. Use appropriate mats.

3. Draw a happy face on the surface right in front of the vault at the eye level (eyes must focus on it).

4. Stressed hips height.

5. If the board is close to the vault, students may hit the vault and/or fall forward.

6. If the board is too far behind the vault, students may misplace their hands and/or not get enough height for the execution of skills.

7. Place the board at a reasonable distance from the vault. Use common sense.

Vaulting Phases

Approach

The instructor must teach the students to run toward the board as fast as they can. As soon as each student is a foot away from the board, he/she should deviate the run to the right of the board, without hitting the board and/or touching the vault. This system provides the students the opportunity to learn to avoid the board and/or vaulting, in case of student's hesitation. It also helps the student to overcome
fear of the approach phase and become more confident.

Contact with the Board and Take-off

Three skills to be developed:

1. Teach the students how to hit the board in the right place for better height production (remember to emphasize two foot contact on the board). Tell the students to run toward the board (at an easy pace). As each student reaches the board (the running sequence should be maintained), hit the board with both feet at the same time and jump upward and forward onto a landing mat. This gives the student the feel of the two foot take-off and acquaints the student with the board. Do not let the students try to reach and/or touch the vault. They will concentrate more on reaching the vault than hitting the board correctly.

After the students have mastered the running approach and making contact with the board, then,

2. Teach the students how to place the hands correctly on the vault:

   a. The hands should be flat on the vault.
   b. The fingers should be spread apart.
   c. The hands should be placed a shoulder width apart, in the middle of the horse.
   d. The arms should be straight.

3. Tell the students to run, hit the board, place the hands (flat and fingers spread apart) and arms (straight) correctly on the vault, while bringing the hips upward with the legs assuming a pike position,
(bend legs at the hip joint and keep them straight. Then, open the pike position and land on a mat placed between the board and vault). Stress the pike position. In this way, the students will concentrate more on hands placement while keeping the legs out of the way.

Common Errors
1. Beginners tend to put the head down while on the vault. This leads to a forward fall. See Teaching Hints - #3.
2. Beginners tend to bend elbows during hands placement on the vault. This leads to a forward fall.
3. Beginners bend back (arch) instead of assuming a pike position.
4. Some beginners tend to anticipate the board contact.

Spotting
Two ways of spotting:
1. The spotter should stand between the board and the vault at the right side. As soon as the student hits the board, the spotter should place his/her left hand on the student's lower abdominal area and the right hand should grab student's right wrist. Variation - placing both hands on student's hip joints. Excellent when working with young children and/or light weight students.
2. The spotter should stand between the vault and the landing mat, directly in front of the vault, (about a foot away from the vault). As soon as the student places his/her hands on the vault, the spotter will place his/her hands on the student's shoulders, controlling the student's forward movement. This spotting system is not very good when working with beginners and when performing squat and side vault. It is
excellent for straddle vault.

Skills

Squat Vault

The student should run, hit the board, and place hands (flat, fingers spread) and arms (straight) correctly on the vault. Then the student should bring his/her hips upward with the legs assuming a tuck position, passing the legs (while in tuck) between arms (while on the horse). He/she should then push off forcefully with the hands and arms (at the shoulder joint) simultaneously and release the tuck position by straightening the legs. The student should land with the knees slightly bent and arms straight over head. The head should be kept up and eyesight focus should be straight forward. See Teaching Hints - #3.

Common Errors

1. Keeping head down. The performer falls forward.
2. Bending the arms.
3. Placing the legs on the vault and/or hitting the vault (lack of hips height).
4. Not enough push-off from hands and arms at the should joint while on the vault.

Straddle Vault

Student should run, hit the board, place hands (flat, fingers spread) and arms (straight) correctly on the vault, bring the hips upward with the legs assuming a straddle position (legs spread and
open). Arms should be straight and between the legs. The student should push-off forcefully with his/her hands and arms (at the shoulder joint and release the straddle position by bringing legs straight together with a slight pike. He/she must land with the knees slightly bent and bring arms overhead. The head should be kept up (see Teaching Hints - #3).

Common Errors

1. Bending the knees throughout the whole skill (due to fright and/or not enough hip height).

2. Bending arms.

3. Placing hands incorrectly.

4. Keeping head down.

5. Anticipating board and/or vault contact.

6. Not pushing-off from shoulders and/or hands.
ROUTINES

Vault

1. Squat vault on, jump off
   Straddle vault on, jump off

2. Squat vault
   Straddle vault
PARALLEL BARS

1. **Physical characteristics**
   a. height adjustable 66 15/16 inches 3/16 inch (170cm ± 5mm)
   b. bars length - 137 13/16 inches + 3/8 inch (350cm + 1cm) in length
   c. bars constructed of wood

2. **Skills**
   a. swing in straight arm support
   b. forearm support
   c. straight arm support
   d. swing in bend arm
   e. back up-rise
   g. shoulder stand
   h. front roll
   i. "L" or pike seat
   j. front dismount
I. Forearm Support

To assume this position the performer must be located between the parallel bars with each hand grabbing a different bar. The forearms and braquialis must rest on the bars with both elbows on the outside of the bars without touching the bars, (elbows abducted). The humerus should be perpendicular to the body. The forearm should have an angle of approximately 70 to 90 degrees with the arm, (humerus). All the body weight must be supported on the arms and forearm. The head, shoulders, back, hips, and legs must be aligned vertically. Toes must be pointed downward. This position will be maintained by tightening all the body muscles. The eyes must focus directly in front toward the end of the bars. The performer must push the bars downward very hard to avoid sinking between his/her shoulders. In this skill the only articulations that should occur are the neck, (atlas and axle), and the wrist articulation. This is so because the eyes should focus to the end of the bars and because the hands never let go of the bars.

II. Straight Arm Support

To assume this position the performer must grab the bars, (one bar with each hand). Then the performer should jump off the mats or surface and support all the body weight on him/her arms, maintaining the arms completely straight. Head, shoulders, back, hips, and legs should be aligned in a straight vertical position. Toes must be pointed downward. This position should be maintained by tightening all body muscles.
Eyes should focus directly ahead toward the end of the bars. The body is lowered to the original position, the performer bends his/her elbows and applies an eccentric force until his/her feet touch the floor or surface and walks out from between the bars. (The bars should be low enough so the performer would have no problem getting on and off the bars and to avoid future injuries).

III. Swing in Support

(Before using the bars the performer should use carbonate of magnesium to avoid slipping off the bars because of excessive sweat).

Starting from straight arm support position the performer should generate a pendulum movement by flexing the waistline a little (pike position), and immediately arching him/her back a little to cause an opposite movement to produce the swing or pendulum movement. The performer must grab the bars tightly to avoid releasing the bars. To continue the movement the performer should use his/her shoulders, while his/her shoulders are in front the feet are back or behind him/her and vice versa. This is done to translate the body weight and always have it leveled off. The performer should maintain a straight body alignment, (head, shoulders, back, hips and legs). The toes must be pointed. This position should be maintained by tightening all body muscles except the neck and shoulders and respective articulations. The only articulation that should be in movement after the initial waist movement, (forward and backward), should be the shoulders articulation and the neck, (atlas and axis), articulation. The performer's eyes must be focused at the end of the bars. (The beginner's swing should be done when the bars' heights are low enough so the performer would have no
problem getting on and off the bars and to avoid injury risk.)

**Common Errors**

1. Lack of good body alignment (arch, pike, tuck, etc.).
2. Lack of maintaining arms straight.
3. Lack of maintaining eyes focused on the end of the bars.
5. Lack of toe pointing.
6. Swinging too high (forward and/or backward).
7. Lack of movement on the shoulder articulation.
8. Lack of movement on the neck articulation.
9. Lack of tightening legs, gluteus, and back muscles.

**IV. Bend Arm Swing**

Assuming the initial or bent arm support on the parallel bars, the performer should generate a swing or pendulum movement by flexing the waistline (small pike) and immediately arching his/her back to cause an opposite movement to produce the swing or pendulum movement. To continue the movement the performer should push downward very hard when the whole body is in front or in an upward motion. In reversing the process, just let the legs come down, back, and upward to continue the swing. The performer should maintain straight body alignment (head, shoulder, back, hips and legs) by tightening all body muscles except wrist and neck muscles and articulations. The toes must be pointed. Hands should grab the bars tightly and eyes should focus forward to the end of the bars. The arms should slightly rotate over the bars, (part
of biceps and triceps muscles). Beginners should swing until the feet reach the bars in front and behind him/herself.

**Common Errors**

1. Lack of body alignment.
2. Lack of maintaining a perpendicular angle (90°), with the arms and body.
3. Lack of correct hand placement (too far in front of shoulder articulation).
4. Lack of toe pointing.
5. Lack of correct eye focus.
7. Lack of movement on the wrist articulation.
8. Insufficient push-off with the arms to continue generating the swing.

V. **Back Up-Rise**

Assuming the initial or bent arm support on the parallel bars, the performer should generate a swing or pendulum movement by flexing the waistline (small pike) and immediately arching his/her back to cause an opposite movement to produce the swing or pendulum movement. To continue the movement the performer should push downward very hard when the whole body is in front or in an upward motion. In reversing the process, just let the legs come down, back and upward to continue the swing. The performer should maintain straight body alignment (head, shoulders, back, hips and legs) by tightening all body muscles except wrist and neck muscles and articulations. The toes must be pointed.
Hands should grab the bars tightly and eyes should focus forward to the end of the bars. The arms should slightly rotate over the bars (part of biceps and triceps muscles). Beginners should swing until the feet reach the bars in front and behind him/herself. The performer should swing from two to three swings to generate a strong back and upward momentum. When the body is in a back and upward motion and the feet are parallel to the bars, the performer should push downward very hard with him/her arms while the feet keep raising and maintain straight body alignment, until he/she has reached a straight arm support. Here the performer should swing once forward and once backward and then reduce the momentum gained by tightening all body muscles and articulations. By flexing the elbows and lowering the body to the bent arm support and then extending the arms directly forward and inward, the performer should dismount the apparatus safely.

Common Errors

1. Lack of body alignment.
2. Lack of maintaining a perpendicular angle (90°), with the arms and body.
3. Lack of correct hand placement (too far in front of shoulders articulation).
4. Lack of toe pointing.
5. Lack of correct eye focus.
7. Lack of movement on the wrist articulation.
8. Insufficient push-off with the arms to continue generating the swing.
9. Insufficient push-off with the arms to assume straight arm support.
10. Lack of momentum to initiate the skill.
11. Anticipation of the upward lift.
12. Driving shoulders too far in front.
13. Pushing off with the arms when leg momentum has reached zero velocity and/or has initiated the downward momentum.
14. After the uprise has been completed, not transferring body weight by moving shoulders backward and forward.
15. Lack of movement on the shoulder articulation.
16. Not grabbing the bars tightly enough.

VI. Front Up-Rise

Assuming the initial or bent arm support on the parallel bars, the performer should generate a swing or pendulum movement by flexing the waistline (small pike), and immediately arching his/her back to cause an opposite movement to produce the swing or pendulum movement. To continue the movement the performer should push downward very hard when the whole body is in front or in an upward motion. In reversing the process, just let the legs come down, back and upward to continue the swing. The performer should maintain straight body alignment (head, shoulders, back, hips and legs) by tightening all body muscles except wrist and neck muscles and articulations. The toes must be pointed. Hands should grab the bars tightly and eyes should focus forward to the end of the bars. The arms should slightly rotate over the bars (part of biceps and triceps muscles). Beginners should swing until the feet reach the bars in front and behind him/herself. When the body is in a forward and upward motion the performer should assume an approximately
90 pike, causing a whip with his legs to generate a strong momentum in the upward direction. With the help of the arms in a push-off action, the performer should reach a total arm extension, maintaining an alignment of the head, shoulders, back, and hips (there should also be a slight inclination or lean backward at approximately 5°) while in the pike position. After reaching total arm extension the performer should regain total body alignment by extending his/her body. Here the performer should swing once forward and once backward and then reduce the momentum gained by tightening all body muscles and articulations. By flexing the elbows and lowering the body to the bent arm support position and by extending the arms directly forward and inward the performer should dismount the apparatus safely.

**Common Errors**

1. Lack of body alignment.
2. Lack of maintaining a perpendicular angle (90°) with the arms and body.
3. Lack of correct hand placement (too far in front of shoulders articulation).
4. Lack of toe pointing.
5. Lack of correct eye focus.
7. Lack of movement on the wrist articulation.
8. Insufficient push-off with the arms to continue generating the swing.
9. Insufficient push-off with the arms to assume straight arm support.
10. Lack of momentum to initiate the ski.
11. Anticipation of the upward lift.
12. Driving shoulders too far in front.
13. Pushing off with the arms when legs momentum has reached zero velocity and/or has initiated the downward momentum.
14. After the uprise has been completed, not transferring body weight by moving shoulder backward and forward.
15. Lack of movement on the shoulders articulation.
16. Not grabbing the bars tightly enough.
17. Lack of enough pike.
18. Lack of whip action.
19. Lack of slight inclination.

VII. Shoulder Stand

Starting in a straight arm support position, raise the legs forward (pike), until the heels have passed the bars, open legs (straddle), and place thighs (hamstrings) on the bars. Transfer hands from behind and place them in front as close as possible to thighs. Lower upper body toward the bars and place upper arms and lower portion of shoulder. While doing this, bend elbows and direct them outward. The arm should be parallel to the floor and perpendicular to the bars. The forearm should have an approximately 70 to 90 angle on the elbow joint. The hand should grab the bars firmly. Legs should be maintained straight and toes should be pointed at all times. After the lower portion of the shoulders are placed, the performer should lift the hips and leave the feet as low as possible. After raising the hips the performer should be in a straddle position. Here the performer should start raising and closing the legs while aligning his/her entire body. To raise the hips
the performer should push downward (without breaking the position of the arms assumed before) with the hands by using and tightening the back muscles, (Latissiumus Dorsi, Trapezius, ). While in the inverted position the body should be totally extended (by tightening all body muscles) eyes should be focused below his/her body, and toes pointed. To lower the body, the performer should inverse the mechanics by separating and lowering the legs until the thighs touch the bars, pushing with the hands until the upper body is in an upright position. Then placing the hands behind close to the back and gluteus area. Straighten arms; close and lower the legs to assume a straight arm support position. By flexing the elbows and lowering the body, assume bent arm support position and then extend the arms directly forward and inward; the performer should dismount the apparatus safely. (Hold shoulder stand from 2 to 3 seconds.)

Common Errors
1. Lack of shoulder stability.
2. Lack of correct hand placement.
3. Lack of body alignment.
4. Lack of toe pointing.
5. Lack of eye focus.
7. Lack of tight arm grip.
8. Lack of holding the position for 2 to 3 seconds.

VIII. Front Roll

Standing in a straight arm support position, raise legs forward,
(pike), until the heels have passed the bars, open legs (straddle) and place the thighs (hamstring) on the bars. Transfer the hands from behind and place them in front and as close as possible to thighs. Lower upper body toward the bars and place upper arms and lower portion of the shoulder area. While doing this, bend elbows and direct them outward. Arms should be parallel to the floor and perpendicular to the bars. Forearms should be at approximately 70 to 90 angle on the elbow joint. The hand should grab the bars firmly. The legs should be maintained straight and toes should be pointed at all times. After the lower portion of the shoulders are placed, the performer should lift the hips and leave the feet as low as possible. After raising the hips the performer should be in a straddle position. Start raising and closing the legs while aligning the entire body. To raise the hips the performer should push downward (without breaking the position of the arms assumed before) with the hands and use and tighten the back muscles (Latissimus Dorsi, Trapezius). While in inverted position the body should be totally extended, eyes should focus below the body and toes should be pointed. The performer should not hold the inverted position at all. As soon as the body has assumed the inverted position it should continue rolling over the arm (tricep), making sure that the body stays straight and aligned at all moments. After the inverted position, the performer should release both bars and transfer the hands as if he/she were to place them alongside his/her body, but maintaining the proper arm and elbow angle to be able to regrab the bars during the roll. The head should be tucked in as to look for the end of the bars, after completing the entire roll. To stop the swing developed by the
momentum of the body after the roll, the performer should tighten all body muscles and articulations until he/she has come to a complete stop. Then by extending the arms directly forward and inward the performer should dismount the apparatus safely.

Common Errors
1. Lack of transferring the strength from the agonistic muscles, (Deltoids and Trapezius), used in the inverted position to the antagonic muscles, (Triceps, Latissimus Dorsi, Rhomboid major and minor, Teres major and minor, ), after the roll.
2. Lack of proper hand placement.
3. Lack of correct eye focus.
4. Lack of correct elbow and arm angle.
5. Lack of proper eye focus after the roll.
6. Lack of timing to release the bars.
7. Lack of good body alignment.
8. Lack of pointing toes.
9. Lack of regrabbing both bars at the same time.

IX. "L" or Pike Seat

Starting on a straight arm support position, flex waistline maintaining a vertical alignment of the head, shoulders, back, and hips. The legs should be straight with the toes pointed and parallel to the bars. The angle that should be assumed is 90° on the legs and body. This position should be maintained for a period of 2 to 3 seconds. To hold this position the performer should tighten the abdominal and leg muscles. Eyes should focus to the end of the bars. Arms should be
strongly tightened and a strong grip should be applied to the bars. By flexing the elbows and lowering the body to the bent arm support position, extending the arms directly forward and inward the performer should dismount the apparatus safely.

Common Errors

1. Lack of proper hand placement.
2. Lack of proper eye focus.
3. Lack of proper body angle.
4. Lack of proper body alignment.
5. Lack of proper lower body alignment.
6. Does not maintain the "I" position for a minimum period of time.

X. Front Dismount

Starting from straight arm support position the performer should generate a pendulum movement by flexing the waistline a little (pike position), and immediately arching his/her back a little to cause an opposite movement to produce a swing or pendulum movement. The performer must grab the bars tightly to avoid releasing the bars. To continue the movement, the performer should use his/her shoulders, while the shoulders are in front the feet are back or behind him/her and vice versa. This is done to translate the body weight and always have it leveled off. The performer should maintain straight body alignment (head, shoulders, back, hips, and legs). The toes must be pointed. This position should be maintained by tightening all body muscles except the neck and shoulder muscles and articulations. The only articulations that should be in movement after the initial waist movement (forward
and backward) should be the shoulders and neck (atlas and axis) articulations. The performer's eyes must be focused at the end of the bars. To perform this dismount the performer's body should maintain its alignment, but strongly tightened, except the neck and shoulder articulation. When the body is travelling back and upward the performer should initiate a lateral movement. The performer should push the bars to the left with both arms, and at the end he/she shall place the left arm on the right bar and release the right bar with the right hand. Therefore, the body will travel horizontally to the right and after passing over the right bar completely the performer should keep grabbing the right bar with the left hand. During the skill execution the performer should have a perfect weight distribution while performing. The performer should lift his/her head so that the legs will lower and land on his/her feet while flexing the knees to absorb the landing effect. The performer should finish with the original standing position.

**Common Errors**

1. Lack of good body alignment.
2. Lack of maintaining arms straight.
3. Lack of maintaining eyes focused on the end of the bars.
5. Lack of toe pointing.
6. Swinging too high, (forward and/or backward).
7. Lack of movement in the shoulder articulation.
8. Lack of movement in the neck articulation.
9. Lack of tightening legs, gluteus, and back muscles.
10. Lack of push to either side.
11. Lack of arms' transfer.
12. Lack of landing absorption.
13. Lack of height on the back swing.

Spotting

When spotting skills on the parallel bars, the spotter stands on the side of the bars and reaches under the bar with the near arm to support the lower back of the performer in case he/she overbalances. With the other hand, the spotter holds the performer's elbow or arm down in position so that he/she cannot possibly slip between the bars.
ROUTINES

Parallel Bars

1. Jump to straight arm support
   Lift legs to "L" seat position
   Lift legs to straddle seat position

2. Straight arm swing
   Bent arm swing
   Shoulder stand
   Forward roll

3. Bent arm swing
   Back uprise
   Forward roll
   Shoulder stand
1. **Physical characteristics**
   a. height - 50 inches ± 3/16 inch (127cm ± 5mm)
   b. distance between pommels (adjustable) from 15-3/4 inches (40cm) to 17-3/4 inches (45cm)
   c. Pommel grip - wood or other suitable material
   d. covering of the horse - top quality leather or comparable material with a padding between the cover and the horse's body.

2. **Skills**
   a. single leg cuts
   b. single leg circle
   c. feint
   d. half double leg circle
   e. double leg circle
   f. travel.
I. Single Leg Cuts

Starting with a straight arm support on the pommels, the performer must maintain legs straight and keep toes pointed throughout the skill. The eyes should be focused where the hands should be placed during the skill. Starting with the right leg, the performer should lean the body to the left, remove the right hand from the pommel, pass the right leg forward, and grab the pommel again. The performer should not touch the horse or pommel with his/her legs during the skill. To bring the leg back to the normal position, the performer should lean the body back to the left, remove the right hand and pass the right leg back to its original two-arm support position. The same mechanics should be employed for the other leg. This skill can be done with both legs in front and/or the skill can be completed one leg at a time (forward and back).

Common Errors
1. Lack of body alignment.
2. Lack of maintaining arms straight.
3. Failure to focus eyes on the pommels in order to regrab pommels.
4. Lack of body inclination.
5. Lack of toe pointing.
6. Touching the pommel and/or horse.
7. Failure to maintain arms straight.
II. **Single Leg Circle**

Starting with a straight arm support on the pommels, the performer should maintain legs straight and toes pointed throughout the skill. The eyes should be focused where the hands should be placed during the skill. Starting with the right leg the performer should lean the body to the left, remove the right hand from the pommel, pass the right leg forward, and grab the pommel again. Then he/she will lean the body in the opposite direction and continue the movement of the right leg to the left over the left pommel (releasing the left pommel and, after the right leg passes over, placing the left hand back on the left pommel). He/she should then place the right leg back in the original position. While lifting and transferring the right leg toward the left, the left leg should rise as the right leg rises and when the right leg is passing over the left pommel the left leg should be higher than the pommel, approximately 8-10 inches away from the horse so that the right leg may fit under the left leg if risen high enough or between the left leg and the side horse if the left leg is not lifted high enough. At this point, the performer should assume the normal straight arm support position and be ready to start the skill with the other leg in the opposite direction.

**Common Errors**

1. Lack of body alignment.
2. Lack of maintaining arms straight.
3. Failure to focus eyes on the pommels in order to regrab pommels.
4. Lack of body inclination.
5. Lack of toe pointing.
6. Touching the pommel and/or horse.
7. Failure to maintain arms straight.
8. Failure to develop enough height on the leg.
9. Not enough separation from the legs to the horse.
10. Incorrect hand placement.

III. Basic Skill—Feint

This movement is used to initiate momentum to execute a double leg circle from a straight arm support position. This is done by starting with a straight arm support and placing the right leg over the right side of the sidehorse in order to assume a position in which one leg is in front of the horse and the other is behind it. Both hands are on the pommels. When the right leg is to be brought over the right side of the sidehorse, it should be forcefully brought back and together with the left leg to gain momentum so as to be able to pass both legs over the pommels.

Note: Feint does not have any common errors, because it is a basic skill and this is merely an explanation of how this movement should be done.

IV. Half Double Leg Circle

Starting with a straight arm support, the performer must place the right leg over the right side of the sidehorse, in order to assume a position in which one leg is in front of the horse and the other leg is behind it. Both hands should be on the pommels. When the right leg is to be brought over the right side of the sidehorse, it should forcefully be brought back and together with the left leg to gain momentum and to
be able to pass both legs over the left pommel. After removing the left hand from the pommel, leaving both legs in front, he/she should place the left hand back on the pommel.

V. **Double Leg Circle**

Starting with a straight arm support, the performer will place the right leg over the right side of the sidehorse, to assume a position in which one leg is in front of the horse and the other is behind it. Both hands will be placed on the pommels. When the right leg is to be brought over the right side of the sidehorse, it should be brought back and together with the left leg forcefully so as to gain momentum to be able to pass both legs over the left pommel. After removing the left hand from the pommel (by leaning to the right), the momentum should be continued with both legs to the opposite side (right). The performer must lean to the left, take the right hand from the right pommel, and pass both legs over the right pommel. Then he/she will place the right hand back on the right pommel. At this point the performer should assume the initial straight arm position. Both arms should be kept straight at all times. The taking off of the hands should be done as quickly as possible. (There is a moment when the pommel is behind the performer and the hand must be placed as soon as possible and vice versa.)

**Common Errors** (single leg circle and double leg circle)

1. Lack of body alignment.
2. Failure to maintain legs straight and together.
3. Failure to maintain arms straight.
4. Lack of sideward inclination.
5. Lack of proper hand placement.
6. Lack of proper eye focus.
7. Lack of quick movement of the hands.

VI. Travel

The performer is to walk on his/her hands from one side of the sidehorse to the other, from the center to the right or from the center to the left. The performer will start from the pommels and move to the right side of the sidehorse. He/she will lean the body to the right and place the left hand on the right pommel, together with the right hand, one hand in front and the other behind. Then, he/she will lean to the left and remove the right hand and place it at the end or at the right side of the sidehorse. Both legs should be kept together and straight. Toes must be pointed. Arms should be completely straight. When the hand is to be placed at the far end of the sidehorse, it should be placed completely flat (with fingers pointing forward). Eyes should focus directly where the hands should be placed. Constant contact of the legs is permitted when doing the skill. This skill can also be done starting from the far ends of the sidehorse and moving to the pommels. The body must be aligned (head, shoulders, back, hips, and legs).

Common Errors

1. Lack of body alignment.
2. Failure to maintain arms straight.
3. Failure to maintain legs straight.
4. Lack of proper eye focus.
5. Lack of proper hand placement.
6. Failure to lean to either side.
7. Lack of toe pointing.

**Spotting**
Side or pommel horse is a very safe event. Although there is a possibility that the performer might fall off backward or forward, a spotter can position him/herself in the front or in the back of the horse (if necessary) to catch the performer.

**Teaching Hints:**
Skills can be demonstrated by using the blackboard, another student or by using the fingers as legs.
ROUTINES

Side (Pommel) Horse

1. Jump to front support
   Basic swing in front and rear positions
   Jump to rear support

2. Basic swings in each position (front, rear, side)
   Single leg cut series

3. Single leg cut series
   Single leg circles (both directions)
   Basic swings in all positions
1. Physical characteristics
   a. attached at 120-1/2 inches 3/6 inch (560 cm 1 cm) above the floor
   b. weight of each attached swivel 21-1/4 ounces
   c. ring frame - 102-3/8 inches 3/8 inches (260 cm 1 cm) apart
   d. rings material - unfinished hardwood
   e. straps material - nylon, webbing or leather
   f. hanging cables - minimum tensile strength of 1,223 lbs.

2. Skills
   a. suspension position
   b. swing
   c. inverted position from tuck
   d. skin the cat (tuck)
   e. bird in the cage
   f. back roll dismount
   g. inlocation
Still Rings

On all skills the performer should start with the suspension position and must assume the correct posture.

I. Suspension Position

The performer should grab each still ring and suspend the body, vertically aligned, maintaining the head between the arms; with head, shoulders, back, hips, and legs in line. The eyes should be focused directly forward. Toes should be pointed downward. Hands must have a tight grip.

II. Swing

Starting from the suspended position, the performer must generate a swing movement by executing a small pike in front and immediately after a small arch on the back, generate the back and forth movement of the legs. While the feet are moving back-and-forth, the arms should be pushing and pulling the rings simultaneously. When the feet are in front the arms are pulling the rings back and while the feet are in the back, the arms are pushing the rings forward. The arms must be completely straight and overhead. The body must be aligned at all moments. If the swing is done properly, one may observe the performer from the side and the waistline should move directly up and down and not forward and backward. The toes must be pointed downward; eyes must be focused directly forward; and the performer must have a strong grip on the rings.
Common Errors

1. Lack of body alignment.
2. Lack of toe pointing.
3. Lack of correct eye focus.
4. Lack of pull and push of the arms (not applying enough force).

Spotting

The spotter should stand by the side of the performer and pushes under the lower back on the forward swing and on the waistline during the backward swing. The main idea is for the spotter to develop a good swing or pendulum movement.

III. Inverted Position (From Tuck)

Starting from the suspended position, the performer should tuck the body and pull upward with the arms, trying to lift the hips over the head. The head should be thrown backward to initiate the movement. After being upside down in a tuck position, the performer should extend the legs until he assumes a complete vertical position, but upside down. The body, legs, hips, back, shoulders, and head must be aligned. The arms must be completely straight. Toes must be pointed upward and eyes should focus forward. To assume the original suspending position the performer should invert the mechanics by flexing the knees and assuming the tuck position again, tucking head in and lowering the hips by applying eccentric force until the performer reaches a complete vertical position. The performer must have a tight grip.

Common Errors

1. Lack of body alignment.
2. Lack of upward arm force.
3. Lack of stability.
4. Lack of correct eye focus.
5. Lack of a tight grip.
7. Lack of head placement during the vertical inverted position.

IV. Skin the Cat (Tuck)

Starting from the suspended position, the performer should tuck the body and pull upward with the arms, trying to lift the hips over the head. The head should be thrown backward to initiate the movement after being upside down in a tuck position, the performer should extend the legs until he assumes a complete vertical position, but upside down, maintaining the backward movement, until the shoulders' articulation lacks up, and does not permit the body to lower anymore (WITHOUT PERMITTING ANY TYPE OF PAIN ON THE SHOULDERS' ARTICULATION SPECIALLY A DISLOCATION). Then he/she should extend the legs and point the toes, keeping the eyes focused forward and hands firmly on the rings. This position is to be held from 2 to 3 seconds. Returning to the original position the force must be concentric. When lowering the legs, the force used must be eccentric. The legs must be tucked and lifted overhead. The head should be tucked in to help the body return to its original position.

Common Errors

1. Lack of leg elevation.
2. Lack of head placement, during and after the movement.
3. Lack of inverted suspension.
4. Lack of toe pointing.
5. Lack of leg extension.

**Spotting**

The spotter should stand on the side of the performer and place both hands on the back of the performer. Also the spotter may grasp the performer's thighs to aid during the performance of the skill.

**V. Bird in the Cage**

Starting from the suspended position, the performer should tuck the body and pull upward with the arms, trying to lift the hips over the head. The head should be thrown backward to initiate the movement. After being upside down in a tuck position, the performer should extend the legs until he assumes a complete vertical position, but upside down. Assuming the upside down position in a tuck position, keeping the eyes on the rings, the performer should place the upper part of the foot into the rings over the hands, and push the hips out, arching the back as much as possible and look forward. It is very important to keep a very tight grip on the still rings. To assume the initial position the performer should tuck the whole body to be able to take the toes out of the rings and with eccentric force lower the legs to the original suspending position.

**Common Errors**

1. Lack of leg elevation.
2. Lack of leg stability.
3. Lack of concentric pull.
4. Lack of eye focus.
5. Lack of back arch.

**Spotting**

1. The spotter should stand on the side of the performer and catch the performer in case the feet and/or hands slip out of the rings.
2. When utilizing low rings the spotter should place one hand on the performer's thighs and place the other hand on the performer's wrist to aid during the performance of the skill.

**VI. Back Roll Dismount**

Starting from the suspended position, the performer should tuck the body and pull upward with the arms, trying to lift the hips over the head. The head should be thrown backward to initiate the movement. After being upside down in a tuck position, the performer should extend the legs until he assumes a complete vertical position, but upside down, keeping the backward movement until he/she can see the landing mat clearly and let go the rings for landing. He/she should flex the knees to absorb the landing from the dismount. He/she should finish with the initial standing position. During the movement the head should be inclined backwards to look at the crash pads.

**Common Errors**

1. Lack of leg elevation.
2. Lack of concentric pull.
3. Lack of head placement.
4. Lack of eye focus.
5. Not absorbing the fall (landing effect).

Spotting

The spotter should stand on the side of the performer, lift under the thigh with one hand and the upper shoulder area with the other hand.
1. Jump to pike inverted hand
   Skin the cat

2. Underswing with stretched body
   Swing to inlocate
   Swing to dislocate
HORIZONTAL BAR

1. Physical characteristics
   a. cross bar diameter 1.02 inches .039 inches (28mm 1mm)
   b. distance from the floor to the bar is adjustable from 102-3/8 3/16 inch (260cm 5mm)
   c. cables must be attached 2 inches (5cm) from the point where the bar is suspended at the pinot point.

2. Skills
   a. basic grips
   b. pull-over
   c. swing
   d. skin the cat
   e. front roll (legs separated)
   f. back hip circle
HIGH BAR

In all skills' description the performer is standing under the bar.

I. Basic Grips

A. Palmar - When the palm of the hands are facing the performer. The arms have a rotation of 180° toward the inside of the body. When grabbing the bar the palm of the hands should be facing backwards. The arms are straight at all moments. Hands should be placed one shoulder width apart.

B. Dorsal - This is the normal grip. This is when the palms are facing toward the end of the gym or forward, when grabbing the bar. Hands should be placed one shoulder width apart.

C. Mixed - This is when one palm is facing forward and the other palm is facing backward. The arm facing backward has a 180° rotation to the inside of the body. Hands should be placed one shoulder width apart.

D. Cubital or Eagle - This is when both arms have a 180° rotation toward the outside of the body and the palms of the hands are facing backwards. This is one of the most difficult grips used in high bar. Both arms are placed wider than normal shoulder width.

II. Skills

A. Pull-Over - The performer starts with a normal suspending position, with a palmar and/or dorsal and/or mixed grip. Then the performer starts to assume a pike position, then raises the legs and hips by pulling strongly with both arms. The head leans backward. The
performer keeps pulling until the waistline is over the bar. Here he/she straightens the arms and aligns the body, (head included). He/she assumes a supination position when using the palmar grip; pronation position when using the dorsal grip; and a combination of both when using the mixed grip. In all three positions eye must focus directly in front. To lower to the initial position (suspension), the elbows are bent applying eccentric force and allowing the body to pass behind the bar starting from the waist and working its way down until the suspension is reached.

Common Errors
1. Lack of proper body alignment.
2. Lack of proper hand placement.
3. Lack of proper arm pull.
4. Failure to pike.
5. Lack of a consistent pull.
6. Failure to point toes.

B. Swing - Starting from the normal suspended position, the performer should execute a pike and lift the hips up without overpassing the horizontal position (body only) and explosively straighten out the body and align it. He/she should keep the arms, body, and legs straight and the toes pointed. At this point the body should start to swing in a pendulum movement. When the body has reached zero velocity at the end of the swing when travelling back and upward, the performer should make a slight pike. When reaching the point directly below the bar the body should be completely aligned again. He/she should start another slight
pike until he/she reaches zero velocity. At this point the body should be extended or aligned and the performer will start the entire movement again. After every swing back and upward the performer should regrab the bar to continue the swing. The head should always be straight up and aligned with the upper body.

**Common Errors**

1. Lack of body alignment.
2. Failure to develop enough swing.
3. Lack of a tight grip and/or regrip.
4. Lack of momentum.
5. Lack of timing of pike and failure to straighten the body.
6. Failure to maintain arms straight.

**III. Skin the Cat**

Starting from the suspended position, a regular grip should be assumed. The performer must tuck his/her body (raising the hips and simultaneously pulling strongly with the arms to elevate the body in a tuck position), lean the head back until he/she can see the crash pad and/or landing mat toward which he/she is supposed to extend the feet. Then he/she must look directly forward, without permitting the body to travel back and down too far (this may cause dislocation and/or unnecessary pain). The legs and body do not have to be aligned; a slight pike could be permitted. To return to the original suspended position the performer should pull strongly upward while he/she tucks the body and passes it over his/her head. The head should be tucked in until the performer can see directly in front. At this moment, the
performer must lower the legs and extend the body to the original suspension position.

**Common Errors**

1. Lack of leg elevation.
2. Lack of head placement, during and after the movement.
3. Lack of inverted suspension.
4. Lack of toe pointing.
5. Lack of leg extension.
6. Lack of enough tuck for the legs to go through the arms.

**IV. Front Roll (with legs separated)**

Starting from a straight arm support with a reverse grip, the performer should pass a straight leg over the bar by leaning over to the left and removing the right hand from the bar but maintaining it straight. Then he/she should regrab the bar with a reverse grip. The legs should be straight and should be maintained separated and off the bar. Body weight should be supported on the arms only. Toes should be pointed at all moments. To begin the front circle, the performer will incline the body forward and focus the eyes forward while the body is falling forward. The performer should keep looking to a spot directly forward, until the body has fallen over so far that the spot no longer can be seen. Immediately, he/she must tuck the head in when the body is almost assuming an inverted position with the legs separated. The performer should continue with the momentum generated from the fall or forward inclination (pulling the bar while in an inverted position and pushing the bar when assuming the initial front circle position). Then,
inclining the body to the left and removing the leg, the performer should place it back in the original place by removing the right hand from the bar, removing the leg, and, finally placing the right hand back again.

Common Errors

1. Lack of body alignment.
2. Lack of toe pointing.
3. Lack of direct eye focus before starting the roll.
4. Lack of head placement during the skill.
5. Lack of momentum.
7. Lack of maintaining legs straight.

Spotting

The spotting technique for skills on the horizontal bar is similar to that used for the uneven bars. Skills can be spotted with the spotter standing either in front or to the rear of the bar. The main purpose of the spotting technique is to provide lift and stabilization. A progressive skills system will enhance safety when performing skills on the high bar.
ROUTINES

High Bar

1. Regular grip hip pull over to support
   Swing in regular grips

2. Swing to kick up to support
   Cast
   Forward hip circle
   Stride circle one/or both directions
BIBLIOGRAPHY


APPENDICES
APPENDIX A

Reference Books
General


Study and Teaching


Adapted


Gymnastics for Children


Gymnastics for Women and Girls


Gymnastics for Men


Physiological Aspects

APPENDIX B

Gymnastics Magazines and Articles
- History of the Development of the USGF.
- Measurements and Dimensions.
- Modern Gymnastics.
- Modern Rhythmic Gymnastics Resources.
- National Compulsory Routines.
- USGF Gymnastics News. Lists all new books and services.
Magazines and Articles

- **Acro Sports Magazine.** United States Sports Acrobatics Federation, P. O. Box 7, Santa Monica, CA 90406

- **Athletic Journal.** John Giffith, Publisher, 1719 Howard Street, Evanston, IL 60202

- **Canadian Gymnastics Federation Bulletin.** Canadian Gymnastics Federation, 11th floor, 33 River Road, Vanier Ontario K1L 8B9 Canada.

- **Dance Magazine.** DANAD Publishing Company, 10 Columbus Circle, New York, NY 10019.

- **Educational Record.** Marcey Massengale, editor, One Dupont Circle, Washington, D.C. 20036.

- **FIG Bulletin.** USGF, P. O. Box 7686, Fort Worth, TX 76111.

- **Gymnastics News.** USGF, P. O. Box 7686, Fort Worth, TX 76111.

- **Gymnastics World.** Sundby Sports, Inc., P. O. Box 110, Santa Monica, CA 90406.

- **International Gymnast.** Sundby Sports, Inc., P. O. Box 110, Santa Monica, CA 90406.

- **Journal of Applied Nutrition.** International College of Applied Nutrition, Box 386, Labra, CA 90631.

- **Journal of Applied Physiology.** American Physiology Society, 9650 Rockville Pike, Bethesda, MD 20014.

- **Journal of Health, Physical Education, Recreation and Dance.** AAHPERD, 1900 Association Drive, Reston, VA 220901.

USGF Materials

Mail all orders to: USGF, P.O. Box 7686, Fort Worth, TX 76111.

- **Age Group Gymnastics Workbook.** - Routines for boys and girls ages 6-8. Built-in grading system for classroom work.

- **Code of Points for Modern Gymnastics.**

- **Code of Points for Women.** Event specifications.

- **Dictionary of Gymnastics Terminology.**

- **FIG Bulletin.** Four issues annually.
APPENDIX C

Instructional-Audiovisual Aids
Instructional-Audiovisual Aids

Films - commercial sources (8 or 16mm, loop, or strip)
- AAHPERD, 1900 Association Drive, Reston, VA 22091
- Association Films, 561 Hill Grove Avenue, LaGrange, Ill.
- Athletic Institute, 200 Castle Wood Drive, North Palm Beach, FL 33408
- Donn Clegg, 501 S. Highland Avenue, Champaign, Ill. 61820
- Frank Endo, 18011 La Salle, Gardena, CA 90248
- Abbie Grossfeld, Gymnastic Coach, Southern Connecticut State College, New Haven, Conn. 06515
- Gymnastics Aides, Inc., Northbridge, Mass. 01423
- Sports Films Library, U.S. Olympic Committee, Olympic House, 51 Park Avenue, New York, NY 10016
- Glen Sundby, 410 Broadway, Santa Monica, CA 90406
- United States Gymnastics Federation, P. O. Box 7686, Fort Worth, TX 76111

Wall Charts
- W.M. Productions, 4950 Home Street, Unit C, Denver, CO 80239
- AMF American Athletic Equipment Division, 200 American Avenue, Jefferson, Iowa 50129
- Nissen Corporation, 930 27th Avenue S.W., Cedar Rapids, IA 52406

Still Pictures
- International Gymnast, Sundby Sports Publications, P. O. Box 110, Santa Monica, CA 90406
- Burgess Publishing Company, Minneapolis, MN 55435
- Gymnastics Illustrated, Don Tony, Hoctor Productions, Waldwick, NJ 07643
- Conditioning for Gymnastics, Bob Spackman, Hillcrest House, Carbondale, Ill.