PEP:

Putting the Fun in Fitness

Bowling





Putting the Fun In Fitness



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Deputy of Teaching and Learning Linda Chen

The School District of Philadelphia The Office of Teaching and Learning 440 N. Broad Street, Suite 251 Philadelphia, PA 19130

Carol M. White, Physical Education for Progress Cooperative Agreement # Q215F070064

THE SCHOOL DISTRICT OF PHILADELPHIA OFFICE OF TEACHING AND LEARNING DIVISION OF HEALTH, SAFETY AND PHYSICAL EDUCATION 440 NORTH BROAD STREET PHILADELPHIA. PENNSYLVANIA 19130

Bettyann Creighton Telephone: 215.400.4210

Director FAX: 215.400.4212

Physical Education is an integral part of a school-wide, comprehensive, instructional program, and contributes to mental alertness, academic achievement and social development. A quality health-related fitness program, improves children's muscular strength, flexibility, muscular endurance, body composition and cardiovascular endurance. Physical activity can also be an outlet for releasing tension and anxiety, and facilitates emotional stability and resilience. Physical Education provides an opportunity for team building, cooperation, leadership development and sportsmanship.

According to NASPE guidelines, a high quality physical education program includes the following components:

- Opportunity to Learn, including qualified teachers and adequate resources
- Meaningful Content, including fitness education and assessment
- Appropriate Instruction, including full inclusion and well-designed lessons

The Office of Teaching and Learning, Division of Health, Safety and Physical Education is pleased to provide you with the Bowling Unit of the Physical Education Core Curriculum. This unit, made possible through a Department of Education, Carol M. White, Physical Education for Progress (PEP) grant, was developed by a cadre of Philadelphia Health and Physical Educators to meet the specific needs of our schools, teachers, students and communities. It includes background information, guidelines for implementation, equipment recommendations, additional resource identification, and core lessons. There is a blank lesson plan template for you to use for additional lessons that you design.

Thank you for the outstanding job that you do. We will do everything that we can to continue to provide professional updates, workshops and resources to support your program.

Acknowledgments

The Division of Health, Safety and Physical Education would like to thank the following individuals and organizations for their help and expertise in developing this unit.

Cardonick, Ellen

- -School District of Philadelphia Health and Physical Education Teacher
- -Certified Personal Trainer, Certified Group Fitness Instructor

Dan Drumm

-School District of Philadelphia Health and Physical Education Teacher

Robinson, Karin

-Communications Technology High School

Rosaline Morgan (Roady)

-Masterman High School

Ray Rothbardt

-School District of Philadelphia Health and Physical Education Teacher

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Preface

In recent years a national emphasis, first on physical fitness, and then on lifetime sports has been responsible for significant changes in school physical education and recreation agency program planning.

Bowling is a sport that truly has lifetime implications. It is enjoyed by youth as well as by men and women of all ages. It serves as a social catalyst and therefore has psychological value. Bowling teaches students discipline, socialization, exercise, and how to compete, not only as a member of a team, but individually with themselves. It is an enjoyable way to stay fit throughout life.

This unit is designed for the gymnasium, but teachers are encouraged to contact their local bowling establishment for class trips either during or after school. It has been the experience of many of those involved in the development of this unit that the proprietors of the bowling alleys are anxious for school groups to come and experience the joy of bowling in their establishment.

THE SCHOOL DISTRICT OF PHILADELPHIA OFFICE OF TEACHING AND LEARNING HEALTH, SAFETY AND PHYSICAL EDUCATION

440 NORTH BROAD STREET PHILADELPHIA, PENNSYLVANIA 19130

Bettyann Creighton Director TELEPHONE:215.400.4210 FAX: 215.400.4212

Dear Parents and Caregivers,

The Office of Teaching and Learning, Division of Health, Safety and Physical Education, is reaching out to parents and caregivers as partners in addressing the health and fitness of our students. As you know, there is a tremendous rise in obesity in our nation, including Philadelphia.

Our office is excited to share wonderful news with parents, caregivers, teachers and students. We have been awarded a generous Physical Education for Progress (PEP) grant from the United States Department of Education. This grant has allowed us to develop updated physical activity units for our schools, including; Fitness, Adventure and Non-Traditional activities. Your child will be experiencing these new activities.

Over the next few weeks, your child will be introduced to non-traditional activities in his/her physical education class. During this time, teachers will encourage students to engage in activities that they have not participated in before. These activities may include yoga, lacrosse, rugby, golf, bowling and archery. The goal is to make physical activity appealing to students so that they will adopt a healthy and active lifestyle.

Please encourage your child to participate in all of these activities fully so that they can receive the full benefits of these units. It is also important for your child to understand and the follow the dress requirements at their school. The Physical Education teacher will share those requirements with the class. If you have any questions, please feel free to call the school to discuss the units or classroom procedures with the teachers.

Sincerely,

Bettyann Creighton, Director Health, Safety and Physical Education

Academic Standards for Health, Safety and Physical Education

Pennsylvania Department of Education

10.4.9 Grade 9

- A. Analyze and engage in physical activities that are developmentally/individually appropriate and support achievement of personal fitness and activity goals.
- B. Analyze the effects of regular participation in moderate to vigorous physical activities in relation to adolescent health improvement.
 - stress management
 - disease prevention
 - weight management
- C. Analyze factors that affect the responses of body systems during moderate to vigorous physical activities.
 - exercise (e.g., climate, altitude, location, temperature)
 - healthy fitness zone
 - individual fitness status (e.g. cardio/respiratory fitness, muscular endurance, muscular strength, flexibility)
 - drug/substance use/abuse
- D. Analyze factors that affect physical activity preferences of adolescents.
 - skill competence
 - social benefits
 - previous experience
 - activity confidence
- E. Analyze factors that impact on the relationship between regular participation in physical activity and motor skill improvement.
 - personal choice
 - developmental differences
 - amount of physical activity
 - authentic practice
- F. Analyze the effects of positive and negative interactions of adolescent group members in physical activities.
 - group dynamics
 - social pressure

Bowling Lessons

Bowling Lesson 1 Safety, the Relaxed Pendulum Swing, and the Ball Release

Objective:

The students will be able to:

- Demonstrate proper safety for bowling in the classroom
- Execute the relaxed pendulum swing
- Release the ball using the "hand shake" position

Standard:

10.4-Physical Activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set up:

Dyna- bands, med balls, bowling balls

Lesson Related Instant Activity: Dyna -bands: Complete 3 stations:

1.One arm pull down 2. chest press 3. Side lateral raises (both sides) 10 Reps each

Fitness Activity:

Med Ball Partner Activities:

Crouch and catch, partner twist, partner taps, spin and pass

5minutes each activity

Lesson (Unit Specific):

Safety & Relaxed Pendulum Swing:

Students will learn safety rules of bowling, how to hold the bowling ball, the relaxed pendulum swing and the ball release

Closure/Cool Down:

Stretching, deep breathing, Mental bowling:

What are the four safety rules? What is important to remember about the pendulum swing? What is the correct way to hold a bowling ball? What should you remember about the ball release? What is the proper hand position?

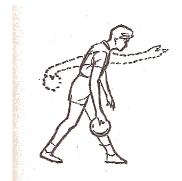
Safety; Holding the Ball; The Pendulum Swing

Class will be divided into rows with enough space so that each student does not touch another when stepping or swinging.

1. Safety

Students must remain on their feet, keep a safe distance between others, respect foul line, NO sliding on gym floor

2. The Pendulum Swing.



- a) Students will practice the natural swing of their bowling arm, without the ball (emphasis on relaxation) while the arm moves smoothly back and forth while in a staggered (bowling hand side foot 6-8 inches behind) position.
- b) Following this practice students will be given a ball.

3. Holding the Ball

- a) Both hands should be placed at the sides of the ball lifting it to a comfortable height
- b) With the non-dominant hand supporting the ball, the middle and ring finger should be placed in their respective holes. The thumb should then be placed into its hole.



If there are not enough balls the class can be divided into rows while some students practice the swing, the ball can be passed down the row to practice the hold.

4. The Ball Release

Students will find a partner and spread out in parallel lines about 15 feet apart. They will have a soft ball between each pair.

1. Safety

Students must remain on their feet and keep a safe distance from each other

2. Release

- a) Students will practice holding the ball with the correct fingers and thumb.
- b) Students will take 2 practice swings. Be sure to emphasize the correct pendulum swing
- c) After 2 swings, the student will release the ball to their partner while in a kneeling (same knee down as side of bowling arm) position. (Emphasize a smooth swing with arm straight and a smooth release in handshake position)
 - 1. The ball should be released beyond the foul line with the thumb in a consistent position between 9 and 12 o'clock.

COMMON FAULTS:

Lofting the ball, dropping the ball, and the thumb in improper position.



Bowling Lesson 2 Follow Through/Accuracy

Objective:

The students will be able to:

- Demonstrate the follow through after the ball is released
- Demonstrate increasing accuracy

Standard:

10.4 Physical activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set up:

Softball/ students will line up with a partner in a parallel line and have a ball for each pair, dyna-bands, med balls

Lesson Related Instant Activity:

Dyna-bands: Complete the stations:

Abdominal Curls, Pelvic tilts, trunk extensions

10 reps each

Fitness Activity:

Med Ball Partner Activities:

Partner ball roll and stretch, partner single leg push, partner squat toss

Lesson (Unit Specific):

Follow Through:

Students will review safety rules, and practice the release. The follow through and the accuracy component will be added

Closure/Cool Down:

Stretching, deep breathing, mental bowling:

What is the importance of follow through? Can you describe how follow through is done? What can be done to increase your accuracy?

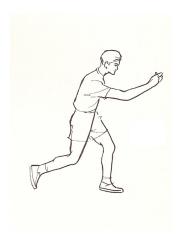
Follow Through

Have students line up with partner in parallel lines about 15 feet apart.

- 1. Review safety rules
- 2. Swing, Release and Follow Through
 - a) Students will take the ball using correct hand position and kneeling position, take 2 swings with straight arm, release the ball smoothly, and follow through by bringing the hand with elbow bent, up to the ear (as if they were answering a phone).

COMMON FAULTS:

Stopping the hand at the release point, and/or attempting to push the ball forward instead of releasing the ball smoothly.



Accuracy

Students will line up with partners about 15 feet apart, Each pair should have a ball and a bowling pin. The pin is placed in front of the knee that would be down.

Practice for accuracy

The students will take several turns using the proper form, kneeling, smoothly releasing the ball after 2 swings, follow through, (hand to ear) and trying to knock down the bowling pin. Students will then switch.

POINTS TO REMEMBER:

- 1. Relax the arm muscles for a natural swing and eye-hand coordination
- 2. Follow through with the arm and hand pointing to the pin
- 3. Try not to aim, but use the natural swing and follow through to develop accuracy.

Bowling Lesson 3 Balance

Objective:

The students will be able to:

- Explain the importance of balance
- Demonstrate good balance while delivering the ball

Standard:

10.4 Physical Activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set up:

Med balls, Soft balls for bowling practice

Lesson Related Instant Activity:

Ball release to partner:

Students will find a partner and practice the ball release taught in the previous lesson.

Fitness Activity:

Med Ball Partner Activities:

Single leg partner toss, single leg reach, med ball push up and pass to partner 5 minutes each

Lesson (Unit Specific):

Balance:

Students will review and practice the ball release, follow through, and rolling for accuracy.

Students will perform various drills and exercises to improve their balance while delivering the bowling ball.

Closure/Cool Down:

Stretching, deep breathing, mental bowling:

Why is balance important? Explain the positions of the knee, feet, and arms?

Balance

A. Students will have their own space to practice balance without the ball first simulating releasing the ball

- 1. Have students lift leg one at a time and try to hold their balance.
- 2. Have the students lean forward. Have them raise their bowling hand and pick up the leg on the same side.
- 3. Have the students step back with the foot 6-8 inches. With arms out to the side lean forward placing most weight on front foot, knee bent (45 degrees). Lift toe off floor and hold balance. Rest toe on floor and move it behind their front leg.
- 4. Use the pendulum swing as they hold the balance position.

B. Students will line their teams up with one person in front facing the other team members

- 1. Team member in front will practice balance and deliver the ball to the first person opposite them.
- 2. The member who received the ball will return it to the bowler using the balance method.
- 3. The bowler will then go to the end of the opposite line and the first person will move to the bowler position.

14

		ГЕАМЅ	PRATICE SETUP 1
1			
2			
3			
5			
6			

SETUP WITH BALL

1		
2	ВО	
3	BOWLERS	
4		
5		
6		

Bowling Lesson 4 Balance Practice in Teams

Objective:

The students will be able to:

• Practice balance with a forward step while bowling

Standard:

10:4 Physical Activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set up:

Bowling lanes, one ball each team, 4 pins, pin layout template Med balls

Lesson Related Instant Activity:

Speed Walk, Jog, Sprint:

Student will alternate speed walking, jogging and sprinting laps around the gym

Fitness Activity:

Med Ball Partner Activities:

Target practice, partner taps, partner wall ball, crouch and catch

Lesson (Unit Specific):

Students will practice bowling balance in groups using the lanes, balls and pins and adding a step

Closure/Cool Down:

Stretching, deep breathing and mental bowling:

What is important when practicing balance? What feels different when using the ball and the lane?

Balance Practice in Teams

- 1. Students will be divided into teams of 5 or 6
- 2. Each group will have a lane, one ball, 4 pins and template
- 3. Each group will have a bowler, technique analyst, a scorekeeper, pin setter, 1 or 2 ball retrievers
- 4. Each person will have 4 turns to bowl (2 each rotation)

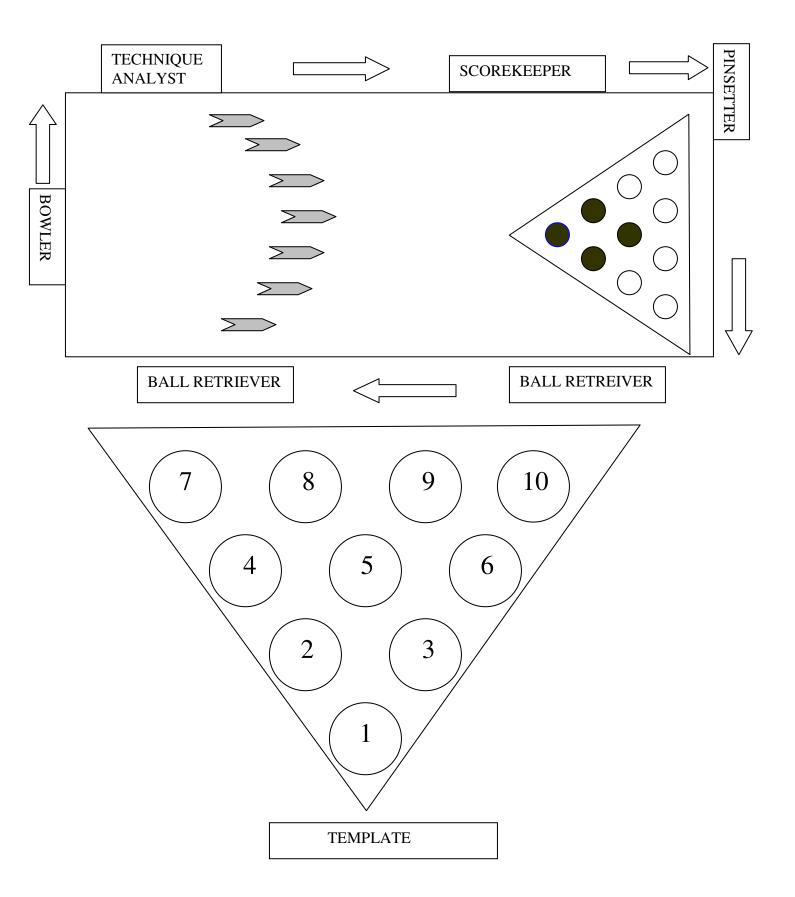
First round - student will take the balance position at the foul line, swing twice and release the ball.

Second round - students will add a step forward on the second swing as they bring the ball down to release it.

- 5. After their turn they will rotate clockwise to the next position
- 6. Students will set up the 1,2,3,and 5 pins on the template

Individual Team Jobs

- 1. Bowler: Make the delivery of ball
- 2. Technique Analyst Will watch the bowler and give feedback as practiced in lesson 5.
- 3. Scorekeeper: Will keep track of pins knocked down
- 4. Pin Setter: Will reset pins after each delivery
- 5. Ball Retriever: Will relay the ball back to the bowler



Bowling Lesson 5 The Four Step Approach /without ball

Objective:

The student will be able to:

• Perform the 4 step approach

Standard:

10.4-Physical Activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set up:

Whole groups Med balls

Lesson Related Instant Activity:

Jogging circuit:

Sprint one lap, (10 push-ups), jog one lap, (10 curl-ups), sprint one lap, (10 jumping jacks), jog one lap, (20 count plank hold), walk one lap

Fitness Activity:

Med Ball Partner Activities:

Chest pass with alternating foot tap, lateral pass, partner ball roll 5 minutes each activity

Lesson (Unit Specific):

Four Step Approach:

Students will learn and practice the four step approach

Closure/Cool Down:

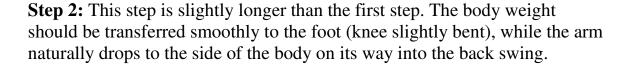
Stretching, deep breathing and mental bowling. How do you mark your starting point? What are the important cues when practicing the four- step approach?

Four Step Approach without ball

*Use whole group practice 1 set –up as in lesson 3

*This is taught for right-handed bowlers. Left-handed bowlers will start on the opposite foot doing a mirror image

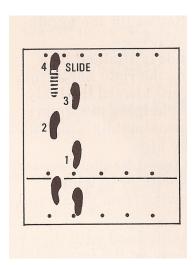
Step 1: When you take the first step moving the leg of the throwing side be sure you push the ball out in front and at the side of you at the same time (waist high position). Make this step a short smooth stride forward, slightly bending the knee and centering the body over the foot once planted.



Step 3: This step is short (knee still slightly bent) as you transfer the body weight onto the ball of the foot. The ball reaches the peak of the backswing at the end of this step. Weight should be centered over the ball of the foot as you push off in a forward motion and the ball starts its downward motion.

Step 4: The fourth step will end with the left foot sliding along the approach (knee bent for support). The ball side leg and foot moves behind the non-ball-side part of the body as the ball is released at the bottom of the swing. The left arm and right foot extend for balance and the arm of the release hand should continue to rise up to shoulder level for the follow through.

Students should practice this approach several times as they analyze each other's movement.



RIGHT HANDERS

5J

Bowling Lesson 6 Four-Step Approach with Ball and Pins

Objective:

The students will be able to:

Perform the Four-Step Approach with ball and pins

Standard:

10.4-Physical Activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set up:

Bowling lanes, one ball each team, 10 pins, pin layout template Dyna -bands, Med Balls

Lesson Related Instant Activity:

Dvna -bands:

Complete Stations: Biceps curls, Triceps press down, forearm flexor 10 reps each

Fitness Activity:

Med Ball Partner Activities:

Partner ball roll and stretch, partner single leg push, partner squat toss, lunge walk alternating use of med ball

Lesson (Unit Specific):

Four-step Approach using the team set-up in lesson 4

Closure/Cool Down:

Stretching, deep breathing and mental bowling. What feels different when practicing the four- step approach with the ball?

*Students will receive directions for keeping score to review for next lesson.

Four Step Approach with Balls and Pins

* Before executing the Four-step Approach, each student will stand with their back to the foul line and walk $4\frac{1}{2}$ steps. This is where they will start their approach.

This is the same as lesson 5, but the students are using the bowling set up for teams used in lesson 4.

Individual Team Jobs

- Bowler: Make the delivery of ball
- Technique Analyst Will watch the bowler and give feedback as practiced in lesson 5
- Scorekeeper: Will keep track of pins knocked down
- Pin Setter: Will reset pins after each delivery
- Ball Retriever: Will relay the ball back to the bowler

Bowling Lesson 7 How To Keep Score

Objective:

The students will be able to:

• Keep score while bowling

Standard

10.4-Physical Activity A/D/E

- A. Analyze and engage in appropriate physical activities that support achievement of personal fitness and activity goals
- D. Analyze factors that affect physical activity preferences
- E. Analyze factors that impact the relationship between regular physical activity and motor skill development

Equipment/Set-up:

Score sheets, pencil, scoring directions, 1 ball, 10 pins, lanes and pin template Students will set up their groups

Lesson Related Instant Activity:

6 laps around- jog, skip, gallop, slide, hop and walk

Fitness Activity:

Med Ball Partner Activities:

5 Hamstring raises and pass ball, back to back twist, over and under pass, lateral toss (10 reps each)

Lesson (Unit Specific):

Scoring:

Students will read and follow the scoring directions while bowling and performing their jobs as they rotate

Closure/Cool Down:

Stretching, deep breathing and mental bowling. What are the symbols for a strike and spare? How do you add them to the scores? What is a perfect game? What do you call three strikes in a row?

Scoring

Fundamental Scoring Rules

- A game consists of 10 frames. Each box on the score sheet represents one frame.
- The maximum number of balls rolled in each frame is two, except for the 10th frame
- When less than 10 pins are knocked down following two rolls, the total number of pins are recorded in the frame
- If a strike is rolled, a score of 10 is earned plus the number of pins knocked down on the next two rolls. The maximum possible score in a frame is 30, representing 3 strikes in a row
- If a spare is rolled, a score of 10 is earned plus the number of pins knocked down on the next ball. The maximum possible score is 20 for a spare followed by a strike
- In the tenth frame, if the bowler makes a strike on the first ball he/she is entitled to two additional rolls

Student set up

- Students will set up as in previous lesson
- Names of student's in-group will be entered on score sheets
- Student in the scorekeeper's position will enter the score of the bowler
- Each student in the group should know what number to enter
- The students continue to take turns and rotate as in previous lesson

NAME	1	2	3	4	5	6	7	. 8	9	10	TOTAL

HOW TO KEEP SCORE

There are 10 frames in a game; each bowler has 2 tries to knock down 10 pins in each frame. In the 10th frame you have an extra ball if you make a spare (knocking down 10 pins in two tries) and 2 if you make a strike (knocking down all pins with the first ball). Follow the directions below to see how to keep score.

- 1. Enter the name of the bowlers on the sheet
- 2.Frame 1: If you knock down 6 pins with the first ball you would enter the (6) in the area next to the small box. If you knock down 3 pins with the 2^{nd} ball you would enter the (3) in the small box at the top. You would then total the score and put it in the bottom of the box.
- 3. Frame 2: If you get a strike (knock down all 10 pins) in this frame you would place an X in the small square. With a strike you would add 10 points plus the next 2 balls. You would have to wait for the next 2 balls to record the score in the bottom of the box.
- 4. Frame 3: If you get a 6,2 in this frame you would record the (6) in the space to the left of the small square and the (2) in the small square. Frame 2 can now be totaled (9+10+6+2=27) and put in the 2^{nd} frame at the bottom. * Remember the rule for a strike (10 points + the next 2 balls). Now you would add 27+8 (6,2)=35 and put it in frame 3.
- 5. Frame 4: If you get a 5 on the 1st ball you would enter (5) in the space to the left of the small square. If you get a spare (knock down the remaining pins) with the 2nd ball you enter a / (mark for a spare) in the small box. With a spare you would add 10 points plus the next ball. You would have to wait for the next ball in the 5th frame.
- 6, Frame 5: If you get 8,1 you would place the 8 in the space next to the small box and the 1 in the small box. You can now total frame 4 (the spare). * Remember the spare rule (10 + the next ball). Now add 35 + 10 + 8 = 53 and put in frame 4. Now total 53 + 9 (8,1) =62 and put in frame 5.
- 7. Frame 6, 7, and 8: For each of these frames you bowled a strike. Three strikes in a row are called a Turkey. * Remember the strike rule. You have to wait for the next 2 balls to get a total. Frame 6:(62 + 10 + 10 + 10 = 92). Frame 7 and 8 you have to wait for the next 2 balls.
- Frame 9: You get 7,2 and record them in the correct area. You can now total frame 7 (92 + 10 + 10 + 7(7)) = 119 and put in the correct spot. Frame 8 :(119 + 10 + 9(7,2) = 138. Frame 9 (138 + 9(7,2) = 147.

Frame 10: If you bowl a 6 and a spare (/) you get to bowl again. You bowl an 8. Frame 10 would be 147 + 10 + 8 = 165. You would then record the 165 in the total column.

Name	1	[(2	2		3		4		5		6		7		8)		10	Total	
	6	3		X	6	2	5	/	8	1		X		X		X	7	2	6	/	8	
John	Ģ	9 27 35 53		3	6	2	9	2	11	9	13	38	14	1 7		165		165				

Score Sheet

NAME	1	2	3	4	5	6	7	. 8	9	10	TOTAL

Support Materials

Physical Education Lesson Plan

Objective:
Standard:
Equipment/Set up:
Lesson Related Instant Activity:
Fitness Activity:
Lesson (Unit Specific):
Closure/Cool Down:

Bowling Suggested Equipment

Dyna-Bands
medicine balls
bowling balls (modified for gymnasium use)
foam balls or playground balls (8 inch)
bowling lanes
bowling pins
pin layout template
score sheets

BOWLING VOCABULARY

Action – Spin on the ball and the movement of pins caused by that pin.

Address – Bowler's starting position.

Alley – A group of lanes or the establishment that houses them. Often used, though, to mean a single lane.

Angle – The direction the ball travels when going into the 1-3 pocket, 1-2 for the left hand bowlers.

Approach (Walk or Runway) – The movement of the bowler from address to delivery Part of the lane from the back of the ball return area to the foul line.

Arm swing – The path your arm takes from your push away to release.

Arrows – The seven aiming points imbedded in the lanes.

Back ends - The last 6 feet of the lane.

Ball rack – The rack used to store house balls or where the ball return rests balls before a turn.

Ball return – Track between the lanes the ball rolls on when being returned to the rack.

Board – A lane consists of individual strips of lumber called boards used for targeting purposes.

Curve – Ball that breaks from right to left.

Delivery – Preparation, Release and Follow-through.

Double - Two strikes in a row.

Five bagger – Five strikes in a row.

Follow-through - The motion after release.

Foul – Touching or going beyond the foul line.

Foul line - The mark that determines the beginning of the lane.

Gutter – The drop offs about 10 inches wide to the right and the left of the lane to guide the ball to the pit.

Gutter ball - A ball that goes into the gutter.

Head pin - The front pin of a rack(the number one pin).

Hook - A ball that breaks to the left or right.

Kegler - A bowler

Line – The path a bowling ball takes.

Lofting – Throwing the ball onto the lane instead of rolling it.

Pit – The space at the end of a lane where ball and pins wind up.

Release – The hand motion as the ball is rolled into the lane.

Slide – The last step of delivery.

Spare – When all pins are knocked down with two balls.

Spot bowling – A target on the lane at which the bowler can aim.

Strike – When all 10 pins go down on the first ball.

String – Three or more strikes in a row.

Turkey – Three strikes in a row.

X - The symbol for a strike.

/ - Symbol for a spare.

Resource

American Association for Health, Physical Education, Recreation and Dance, "New Ideas for Bowling Instruction".