

LESSON 3: ACCURACY, VARYING SPEED, AND TRAJECTORIES

Grade-Level Outcomes

Primary Outcomes

Shot selection: Varies the speed and/or trajectory of the shot based on location of the object in relation to the target. (S2.M9.7)

Throwing: Demonstrates a mature pattern for a modified target game such as bowling, bocce or horseshoes. (S1.M18.6)

Embedded Outcome

Challenge: Recognizes individual challenges and copes in a positive way, such as extending effort, asking for help or feedback and/or modifying the tasks. (S5.M3.6)

Lesson Objectives

The learner will:

- demonstrate score-keeping knowledge by taking a short practice quiz.
- demonstrate ball-placement skills by setting a goal on which pins to knock over.
- explore varying speed and trajectory during activities in the lesson.

Equipment and Materials

- Practice quizzes for each student on score keeping
- Pencils
- Calculators
- 10 numbered (1-10) bowling pins per each group and lane or a modified version for a gymnasium
- Bowling balls for each student
- Scorecards or score sheets for accuracy goal

Introduction

I received your handouts. (Go over the results of the homework.) Today, you will have the opportunity to practice keeping score. I have pencils and calculators. If you don't understand completely, it's okay. We will keep working on it.

Instructional Task: Practice Quiz—Scoring

■ PRACTICE TASK

Hand students the practice quiz, pencils, and calculators.

Extensions

- Have students watch a few frames of a bowling video and practice scoring.
- This would also be a perfect cross-curricular activity. Get assistance from the math teachers to help with connecting math content to bowling content.

Student Choices/Differentiation

- Make calculators available to students.
- Have multiple questions within a range of difficulty.

What to Look For

Students can correctly score a bowling game.

Instructional Task: Varying Speed and Trajectory

■ PRACTICE TASK

Have students explore bowling with varying speeds, trajectories, or both.

Challenge students to safely explore throwing fast, slow, and with different angles and spins.

Refinement

Students may get excited trying the different types of rolls. Make sure students are practicing safely and are under control during this activity.

Guiding questions for students:

- What is the benefit of rolling the ball fast? Slow?
- What do you think is the ideal speed to roll the ball?
- Did anyone have success changing the angle of their approach or using a spin?
- When would you want to use the different speeds and trajectories approach and why?

Extension

Have students practice again using the information gained from the class discussion.

Student Choices/Differentiation

- Guide students through the activity with prompts if needed.
- Have students practice using different sizes or types of balls.

What to Look For

- Students are exploring different ways to vary speed and trajectory when bowling.
- Students are implementing strategies from the class discussion.

Instructional Task: Accuracy Bowling

■ PRACTICE TASK

In groups of two or three, practice bowling. If not in a bowling alley, pin setters will be needed.

Students take turns aiming for a selected pin you have designated (usually 1, 2, or 3).

Mix it up for students by varying the numbers.

Refinements

Stop the activity and remind students to:

- use the four-step approach.
- take their time and aim! (But do not change the motor pattern.)
- use the arrows on the lane.

Extension

See if students can match the score of your choice by accurately hitting the correct number of pins.

Student Choices/Differentiation

Students may vary distances according to skill level.

What to Look For

- Students know how to properly select a ball.
- Students are following the rules for etiquette.
- Students are accurately using the four-step approach.
- Accuracy: Students are knocking over the correct pins.

Instructional Task: Low Ball

■ PRACTICE TASK

Students aim for the outside pins (7 and 10).

Extension

Students set goals on which pin they will knock over (7 or 10). Students keep an accuracy record.

Refinement

Students like to modify their approach or movement pattern when rolling for accuracy. Make sure students are using the proper form.

Guiding questions for students:

- How will you change your aim this time?
- How is this different from the last activity?
- Did you change your angle or speed of the roll to accomplish the task?

Student Choices/Differentiation

- Students may choose the ball.
- If students are having difficulty with this task, they may start closer to the target.

What to Look For

- Students are using the four-step approach accurately.
- Accuracy: Students are knocking over the correct pins.

Formal and Informal Assessments

- Practice quizzes on keeping score
- Goal-setting scorecard for students
- Informal observation from the instructor

Closure

- What were the main ideas of our activities today?
- Do you think you were successful?
- What are some important elements of speed and angles in bowling?

Continue to study the rules of bowling and practice keeping score. I have take-home practice scorecards; hand these out to the people in your row/group.

Reflection

- Did students seem to enjoy the activities today?
- What do students seem to be struggling with from today's activities? (e.g., aiming, four-step approach, scoring)

Homework

Continue to have students review rules and scoring for a quiz.

Resources

Grinfelds, V., & Hultstrand, V. (2003). *Right down your alley: The complete book of bowling*. Belmont, CA: Wadsworth.

Physical and Health Education America: www.pheamerica.org

Print Your Brackets: www.printyourbrackets.com/printable-bowling-score-sheet.html

Rules of Bowling: www.rulesofbowling.com