

Body Measures: Exploring Distributions and Graphs Using Cooperative Learning

Instructor Lesson Plan

Cooperative Learning lesson plans involve four steps:

1. Making preinstructional decisions.
2. Explaining the task and cooperative goal structure.
3. Monitoring and intervening during the lesson.
4. Assessing and processing the lesson.

Preinstructional Decisions

1. Group Size: Groups of 4 students.
2. Assigning student groups: Students count off in order to form groups of four. For example, in a class of 28 students ($28/4 = 7$), count off by 7. This creates seven groups of four students.
3. Roles: Within each group of four students, two students are assigned to “Head Circumference” and the other two students are assigned to “Hand Span”.
4. Room Arrangement: Groups of four students sharing two computers.
5. Materials: For each group of four students:
 - 2 tape measures
 - 2 computers
 - 2 copies of “Head Circumference CL” worksheet
 - 2 copies of “Hand Span CL” worksheet
 - 2 copies of “Body Measures Group CL” worksheet

Explaining Task and Cooperative Goal Structure

1. Instructional Task: Explain the task. Today’s lesson involves two steps. First, groups will collect and analyze data on head circumference and hand span. Second, groups will compare their results for each of the two variables.
2. Criteria for Success: Students are to (1) correctly answer each of the questions on the student worksheet, and (2) be able to explain how they got the answer.
3. Positive Interdependence:
 - a. First, groups of four divide into two pairs. One pair of students will complete the “Head Circumference CL” worksheet, the other pair will complete the “Hand Span CL” worksheet. Note: each pair should collect data on all four members of the group.
 - b. Second, one individual from each pair will present their findings to an individual from the other pair. Thus, within new pairs, one person presents the Head Circumference results and the other presents the Hand Span results.

- c. Third, each new pair (i.e., the pair including one “Head” and one “Handspan” person) will complete one “Body Measures Group CL” worksheet comparing both the hand span and head circumference variables. Each student receives a bonus point for correct group worksheets.
4. Individual Accountability: Each group member is responsible for presenting their results. I will call on individuals at random to explain their answer on a particular problem. Also, remember that on Friday you will have a quiz with similar problems to be taken individually.

→ The Cooperative Learning lesson plan emphasizes several ways that instructors may incorporate positive interdependence (i.e., collective assessment) and individual accountability. See the Cooperative Learning module for more details (<http://serc.carleton.edu/introgeo/cooperative/index.html>).
5. Intergroup Cooperation: When each pair completes their group worksheet, compare your answers with the answers of the other pair. If your answers differ, choose the best answer.
6. Expected Behaviors: I expect to see the following things while you are working: (1) group members will contribute ideas when answering worksheet questions and (2) group members asking for help when they do not understand how to answer a particular question.

→ See “Teaching Social Skills” file at the Cooperative Learning module for more tips on encouraging expected behaviors and developing social skills (<http://serc.carleton.edu/introgeo/cooperative/index.html>).

Monitoring and Intervening

1. Systematically observe each group’s taskwork (efforts to solve the problems) and teamwork (efforts to work together effectively).
2. When a group is struggling, watch for the right moment, then point out the problem (whether it be taskwork or teamwork). Then, ask the group what can be done about it. This establishes the teacher as a consultant rather “answer-giver”.

Assessing and Processing

1. Assessment of Individual Learning: Randomly select a student to explain an answer.
2. Assessment of Group Productivity: Each group hands in two Group worksheets.
3. Small Group Processing: Ask groups to discuss: “How well did we manage our time?”
4. Whole Class Processing: Lead a discussion on how well groups worked together. Model good processing by sticking close to actual, specific observations of positive behaviors.
5. Celebration: Turn to your group and say, “We did it! Thanks for your help!”