

# Gaming in the Classroom - Lesson Plan

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## Wii Sports Resort – Frisbee Golf

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Grades: 4-5 Subject Area: Math

### Overview

In this lesson, students will be able to review multi-digit subtraction problems, review place value of whole number digits & convert measurements in the customary system.

### A. Topic: Subtraction/Place Value/ Measurement Conversion

### B. Objectives: Common Core Standards

CCS 4.OA	Use the four operations with whole numbers to solve problems.
CCS 4.NBT	Generalize place value understanding for multi-digit whole numbers.
CCS 4.NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.
CCS 5.NBT	Understand the place value system.
CCS 5.NBT	Perform operations with multi-digit whole numbers and with decimals to hundredths.
CCS 5.MD	Convert like measurement units within a given measurement system.

### C. Instructional Resources:

Wii Gaming System	Wii Sports Resort with Frisbee Golf game
Projector/White board	Wii remote
Paper/pencil for students	Pre/Post tests if desired

### D. Procedures:

1. We began by playing 3 holes on course A. The course doesn't really matter, and there are 3 to choose from so the students can have different views and starting yardages at least a few times. (Of course, even if they play the same course each time, they will have different yardage because each hit will be a different distance.) The option for holes is 3, 9 or a full 18, so we decided that 3 would be the best place to start.

2. Before the first student throws the Frisbee, have all students mark down how many yards to go to the hole (this number is on the screen). Have a student begin by throwing the Frisbee towards hole #1.

3. Once the first student has thrown, the screen will show you how many yards are still to go to the hole. This is the # the student subtracts from what they initially wrote on their paper in step 2. This answer shows how many yards the Frisbee traveled. Have the students convert the total number of yards to feet and the same with the yards remaining. Then subtract to find out how many yards/feet the student threw the Frisbee.

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4. Continue these steps until a player reaches the green.
5. Once this happens the distance is calculated in feet. The student will have to convert yards to feet by knowing there are 3 feet in a yard.
6. Once you are on the green it gives you the distance to the tenths place, so you can also introduce/review the idea of lining up decimal points and doing the operation. (Of course you can also discuss rounding here too and stick with whole numbers.)
7. Continue subtraction in feet until the Frisbee is thrown into the cup. There is a chance that a student might throw the Frisbee too hard, and you will have to convert back to yards again.
8. Once the Frisbee is in the cup, have the students add up the total distance the Frisbee was thrown and have them compare this number to the total written down at the beginning of the game. How can the actual distance thrown be greater than the total distance to the cup? (Because the Frisbee was thrown past the cup or to the right and left of the cup).

### **Teach:**

\*Suggestion: Teacher stands at the board and works first problems and then as students become comfortable, invite students to come up to the board to do problems as models for the class.

\*Students who are not up actively participating in the game should be at their seats doing problems. Collect papers at end of class and review for engagement and understanding.

\*Suggestion: Have an order in place so students know who goes next- this will free up time during the lesson.

\*If Pre/Post tests are going to be given, plan for these assessments during a different class time, this lesson will last for the full 45-50 minute period (in order for all students fully participate).

### **\*Sample game play:**

Hole 1 401 yards to go- first player throws the Frisbee

Remaining 119 yards

Figure out how far the first player threw  $401-119 = 282$

1st player threw 282 yards

Next time a player goes the game shows 119 yards to go- begin with that number on the student's page

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Then after the next throw it says 7 yards to go - we can figure out that the student tossed 112 yards

Next time it said the student was 41.9 feet away (threw past the hole) so you can convert to yards - you can also convert yards to feet and back again.

### **Closure:**

1. Review conversion skills/formulas
2. Review borrowing skills in multi-digit subtraction
3. Post test plans if desired

### **Assessment:**

1. Teacher observation
2. Collect student seat work and evaluate for participation or for correct computation
3. Conduct Pre/Post tests covering conversions in the customary system or multi-digit subtraction skills

### **Differentiation:**

- \*Conversion skills can be made more challenging by introducing different measurements
- \*Conversions can be made easier if distances are rounded

### **Connections:**

- \*Integers can be introduced when/if students shoot past the golf hole
- \*Estimation and rounding can be reviewed/discussed with the use of decimals in the game
- \*Operations with decimals can also be taught/reviewed through game

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