

Bowling Pin Subtraction

SOLAR (with ECE adjustments)

Age Level: Kindergarten

Subject(s) Area: Math, Physical motor skills

Materials Needed: Empty plastic bottles (Bowling pins), small whiteboard and markers, a ball, poster board with marked circles for pins to be placed on.

Standards:

SED.1.4 Regulate physical actions

SED.2.2 Communicate with peers or adult when encountering challenges.

MTH.5.2 Choose which strategies and thinking skills should be used when solving a problem.

MTH.1.3 Relates numbers and quantities to the everyday environment

MTH.1.6 Demonstrates ability to compare quantities of objects

Objectives: Students will:

Students will be active in a team sport, and work together to solve math problems.

Students will understand basic subtraction from numbers 0-10.

Students will use repetition to work subtraction problems in their head.

Students will play fair and have good sportsmanship and be encouraging of one another.

Learning Activities:

This activity focuses on working with subtraction in groups of 10 and less. Basic subtraction will be used when the child is bowling. Each child will take two turns bowling, just as if they were bowling at the bowling alley. As a class, we will first go over how many bowling pins are in a set, so they know what number they are starting at each time. Once the child rolls the ball the first time, they will aim to get as many pins down as possible. With these numbers, they will solve a subtraction equation. They will take the original number of bottles (10), and count the number of pins they knock down. They will use those two numbers to solve their equation. For example, 10 to start, they knock 6 down, what are they left with? Children will be provided with whiteboards to work out the problem. Each child will have two turns to try to knock down all pins, that way if they have $10-6=4$, they will have the next problem of pins be $4-X=?$. This will be a great fun way to use subtraction and apply the math method to everyday lives.

Bowling pins will provide them with physical proof of subtraction so if they get stuck subtracting, they can count it out right there.

Reflective Questions:

How many bowling pins do you start out with at the beginning of your first “frame?”

How can you use bowling as a way of subtracting numbers?

Have you ever bowled before? If so, did you ever think you were using subtraction in the game?

How can you use addition in the game of bowling?

Vocabulary Words: frame, subtraction, minus, bowling, pins

Assessment: The main assessment to this activity is to make sure they are subtracting numbers correctly. If they are struggling, allow them to physically count the pins that fell and subtract those from the beginning number. The children will use a whiteboard that I provide to complete the subtraction problems. This will help me determine if they are understanding number sentences and learning the process of writing out math equations. The whole goal is to make it fun for them; this can be a great way to get children to enjoy subtraction in a fun and simple way.

Reflection:

This lesson was a huge hit! The kids loved that they were able to bowl and they did not have a hard time understanding the concept of what they had to do. The only issue I had with this activity was that the children wanted to keep touching the pins and setting them back up before we had a chance to count things out. After about the third or fourth time this happened, I was able to redirect the group by having them scoot back behind a certain spot on the carpet so that they were not within reach of the pins. I let the students know during the time I introduced the game that if it was not their turn, they were not to be able to touch the pins or ball. This rule worked for most of them. There were a few students who got too excited and could not follow directions entirely, so I finally had to move the class as a whole to a spot that they knew they couldn't cross a certain line. I moved them onto the edges of the carpet and let them know they could not enter a certain part of the carpet. This worked well, and though some got closer than they were allowed to, the students helped remind each other throughout the whole game, which helped keep them accountable for their own actions.

The kids were very entertained and they cheered each other on. This was awesome to see because it really took these children into a state of mind that they were actually at the bowling alley trying to get a high score. Most of the children were able to work out the problems, and if they had trouble they were able to look at the pins and figure out the math. If they could not figure it out at all, I put the whiteboard down and I counted with them using our fingers. Using fingers to count was the last resort, and was not used very many times. I feel that this activity was really great for them to do

because it helped them understand math in an everyday sport. Using bowling as a tool to practice subtraction allowed the children to use their math skills and apply it to real life situations. I left this activity with my practicum teacher, and before I did I wanted to make sure it was okay with her because I did not want it to become too rowdy when the children use it on their own.