Sporting Decisions Lesson Plan

Main focus of activity:

- To introduce the idea of negative numbers

Learning objectives:

- To be able to work out simple calculations involving negative numbers
- To be able to find strategies that involve multiplying negative numbers
- To be able to effectively make and justify decisions based on the information presented.

Links to curriculum: Links to the maths curriculum are as follows

- Addition and subtraction of negative numbers
- Multiplying negative numbers
- Making decisions using data

Activity outline:

Introduction

- The students are presented with the disciplinary record of 20 players. (Hockey or football). Each player has been given the following information, fouls committed, yellow cards and red cards. The teacher can decide what negative value each offense is allocated. The values I used were -1 for each foul, -3 for each yellow card and -5 for a red card.
- There is a prepared worksheet in the resource pack with the player data available.
- Pupils are asked to pick their worst 5 players by inspection at the beginning of the lesson. They are then asked to compare this with the actual worst 5 players after the values of -1,-3 and -5 are applied.

Starter
From the information on the flipchart can you pick the worst five players?
(Some of the player data is shown on the prepared flipchart)

Main
Pupils are asked to then actually calculate the disciplinary records of the 20 players. At this point the teacher can differentiate by asking more able pupils to work with harder systems. For example the values -1 for a foul, -3.5 for a yellow card, -7.25 for a red card could be used for a more able pupil.

This also allows the discussion to take place that if different negative number systems are used are the results of the worst players changed.

Pupils are also encouraged to develop strategies as they work through the activity. Many pupils will work out that if a player has 10 yellow cards and each yellow card is allocated a value of -3 it is a quicker to work out 10x-3 than to repeatedly -3-3-3-3-3-3…..10 times. This is a key benefit from this

activity as pupils soon deduce that 10 x -3 is the -3-3-3 … being repeated 10 times. This activity allows the pupils to build connections without being explicitly told.

Plenary
If different systems are used for the discipline record are the same 5 players the worst?

Were the worst five players you selected at the beginning of the lesson actually the worst when you had actually calculated the values using negative numbers?

What does this show us?