

# Science Investigation

Do team colours affect performance?

“Whether color can affect performance or emotions has long fascinated scientists - not to mention advertisers, sports teams and restaurateurs.”

*(New York Times)*

# Outline of investigation

- Run up to the Olympics
- TV program Horizon, suggests that teams perform better or worse depending on the colours they are wearing
- We decided we could test this theory using our own school teams

**Hypothesis: Team colours affect performance**

# Background information

- Horizon – Do you see what I see?

“The evidence is starting to emerge that the colour red can make you into a winner – certainly in sport.”

“There is evidence gathered from the 2004 Olympics - from the sport of Taekwondo - that wearing red in sport can make you a winner.”

## *New York Times*

- “If a new study is any guide, the color red can make people's work more accurate, but blue can make them more creative.” (*New York Times*)
- “The researchers suggested that red, for athletes, as for animals, subconsciously symbolizes dominance.” (New York Times)

# Investigation

## Intervention:

- Switch of players colours to assess effect on performance

## Equipment:

- Two teams from three different sports
- Two sets of coloured bibs, one blue one red
- Appropriate sports equipment

## Method:

- Select two equally matched teams for each of three different sports: badminton, netball and basketball
- At the beginning of each match, give each team a different colour bib: blue or red
- Teams play one 5 minute match
- Teams rest between matches
- Switch coloured bibs around and play a further 5 minute match
- Record results of all of six matches

# Results: broken down between matches

## Match 1

Sport	Win	Lose
Badminton	Red	Blue
Netball	Red	Blue
Basketball	Red	Blue

## Match 2

Sport	Win	Lose
Badminton	Red	Blue
Netball	Blue	Red
Basketball	Red	Blue



# Discussion and improvements

We chose for the opposite teams to wear the colours blue and red

- Very different colours allow clear results
- Red = dominance and strength
- Blue = calm and creative

KEITH W.JACOBS AND JAMES F.SUESS carried out an experiment in 1975 exploring physiological effects of primary colours on anxiety states. Concluding results showed that red and yellow caused significantly higher anxiety rates than green and blue

## Subconscious bias:

- Handing out the bibs – may have subconsciously given the stronger players red bibs to start
- Horizon explored how in the 2004 Olympics taekwondo sport, judges subconsciously awarded points to the red team

We could have improved the equality of our teams by matching physical sides and fitness

Allowing players to have a rest between matches makes it a fair test, ensuring that the order that players wore the coloured bibs did not affect their performance (tiredness)

In addition, after the first match, players confidence may have changed due to the results. This may affect how they play and how intimidating their opponent seems

# Conclusion

- Our investigation supports the hypothesis – **Team colours affect performance** because in the majority of matches, the team with the red bibs won

However, our investigation did not prove the hypothesis because it was not statistically significant

To become statistically significant, for each sport we would have needed to:

- Test on many more matches (perhaps hundreds)
- Test on a range of ages
- Test different genders
- Use a range of colours – e.g. black (when this colour was tested, players wearing black scored more points than players wearing red)