



# 'How To' Guide – Comparing Pie Charts



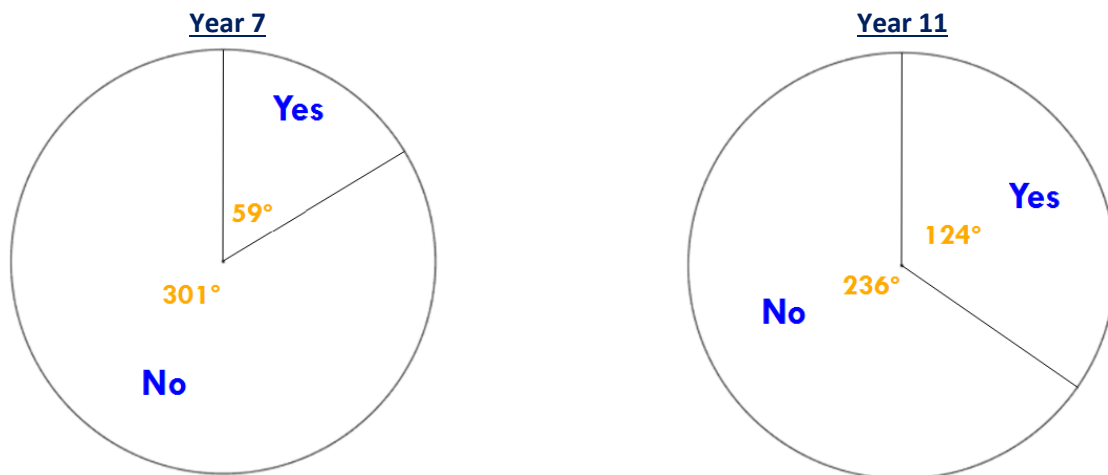
When **comparing** pie charts, it is important to understand that they do not show quantity, they show proportion. Pupils sometimes do not have a grasp of this concept. For example, if two different pie charts show a quarter (or  $90^\circ$ ) for the same category, some might assume that this represents the same number. This may not be the case as the total for each pie chart may be different.

## Comparing - How we teach it

- Unless you know the **number** of people/things represented by a pie chart, you can only really comment on the proportions, not the actual numbers.
- It would be incorrect to make assumptions without knowing true values.

## Example

Pupils in Y7 and Y11 were asked if History was their favourite subject.  
This information was then put into the following pie charts:



Compare the information given in the two pie charts.

## Incorrect

**More pupils in Year 11 said that History was their favourite subject.**  
or  
**Less pupils in Year 7 said History was their favourite subject.**

We do not have enough information to make these assumptions. We do not know how many Year 7 or Year 11 pupils were asked. For all we know, more Year 7 pupils than Year 11 pupils might have said yes, despite their proportion being smaller. If more Year 7 pupils study history than Year 11 pupils, these statements could actually be false.

## Correct

**A higher percentage of pupils in Year 11 said that History was their favourite subject.**  
or  
**A lower proportion of pupils in Year 7 said that History was their favourite subject.**

Notice the wording here. It accounts for the fact that we do not actually know numbers.