# 10DS Data Scientist Technical Exercise – National Tutoring Programme

**Context**

The [National Tutoring Programme](https://www.gov.uk/government/publications/national-tutoring-programme-guidance-for-schools-2022-to-2023/national-tutoring-programme-guidance-for-schools-2022-to-2023) (NTP) is intended to help pupils across the country catch-up on missed time in school due to the pandemic. The NTP provides primary and secondary schools with funding to give pupils access to one-to-one or small group teaching with specialist tutors.

NTP funding covers 60% of the cost of tuition, with the remainder of the cost covered by the school using other sources of funding, such as the [pupil premium](https://www.gov.uk/government/publications/pupil-premium/pupil-premium). NTP funding is £349m in academic year 22/23.

**Task**

The Department for Education is considering bidding for £20m to intensify the NTP in up to ten local authorities. No 10 Delivery Unit have asked you to analyse the data in this space help decide in which local authorities we should intensify the programme in order to increase the uptake and impact of the NTP.

1. Produce a short presentation of at most five slides to communicate your findings to No 10 Delivery Unit.
2. Email a zip file of your presentation and all of your code / workings used to complete the exercise with the subject line ‘Data Scientist technical exercise’ to [bhenshall@no10.gov.uk](mailto:bhenshall@no10.gov.uk) at the time specified in the cover email. Please convert any presentational materials to pdf format to ensure they can be opened.
3. Deliver a short presentation on your findings. You should aim for a presentation that lasts for five minutes, and there will be a hard stop at seven minutes. The target audience for your presentation is No 10 Delivery Unit. Bear in mind this target audience may not have an analytical background.

**Points you may wish to consider**

No 10 Delivery Unit have advised that you may wish to consider:

* The characteristics and locations of local authorities in relation to their NTP take up
* Where funding might be allocated for greatest impact
* A recommendation for NTP intensification based on your work so far
* How you would develop your analysis further given more time

**Resources**

We have suggested these datasets as a starting point to foster your creativity. You do not have to use all of them, and you are free to use other data from the web to support your narrative.

N.B: education statistics at local authority level typically refer to upper-tier local authorities in England, of which there are 152.  
  
You are welcome to use data from other sources beyond the below if it helps.

[National tutoring programme statistics](https://explore-education-statistics.service.gov.uk/find-statistics/national-tutoring-programme)

[Schools, pupils and their characteristics](https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics)

[Education statistics explorer](https://explore-education-statistics.service.gov.uk/find-statistics?sortBy=newest)

[English indices of deprivation 2019 - GOV.UK (www.gov.uk)](https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019)

[ONS Open Geography portal](https://geoportal.statistics.gov.uk/)

**Expectation**

You are required to demonstrate:

* a general understanding of how to manipulate data
* awareness of analytical techniques and best practices
* intellectual curiosity and story-telling ability

We do not expect an exhaustive analysis of all data. Rather, we would like to gain insight into your technical abilities and how you approach an exploratory problem from a data science / analytical perspective**.**   
  
You can highlight additional or different approaches you would consider if you had more time, both in your presentation and in comments in your code / workings).