



Spotify Analysis





Level

Early **First** Second Third Fourth

Duration

30 – 60 mins

Data Education Framework

Problem Plan Data **Analysis** Conclusions

Curricular Areas & Outcomes

The outcomes covered by this task will vary depending on whether the task is completed online or offline. The outcomes noted for offline are also applicable to online.

Outcomes for Offline Task	
MTH 1-21a	Using technology and other methods, I can display data simply, clearly and accurately by creating tables, charts and diagrams, using simple labelling and scale.
MNU 1-20a	I have explored a variety of ways in which data is presented and can ask and answer questions about the information it contains.
MNU 2-20a	Having discussed the variety of ways and range of media used to present data, I can interpret and draw conclusions from the information displayed, recognising that the presentation may be misleading.
MTH 2-21a	I can display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams and graphs, making effective use of technology.
Outcomes for Online TaskS	
TCH 1-02a	Using digital technologies responsibly I can access, retrieve and use information to support, enrich or extend learning in different contexts.
TCH 2-01a	I can extend and enhance my knowledge of digital technologies to collect, analyse ideas, relevant information and organise these in an appropriate way.



TCH 1-13a

I can explore and comment on processes in the world around me making use of core computational thinking concepts and can organise information in a logical way.

Reviewing Learners' Work

Resources & Materials

Spotify data set appropriate to your learners
Learner worksheet that corresponds to the data set in use
Paper, pencil, ruler
Coloured paper & coloured pencils (optional)
Access to spreadsheet software (optional)

Activity Description

This activity uses secondary data provided by Spotify. Learners will use the dataset to identify patterns and relationships between different characteristics.

Inclusion & ASN

Two different versions of the dataset are available to allow this task to be differentiated. Each dataset contains an increasing number of records and characteristics. Teachers are free to create their own subsets of data to suit their learners.

Learning Intentions

What do I want learners to know?

- Data is being collected by online services
- Data can be analysed to make decisions about the online services

What do I want learners to understand?

- Understand what we mean by a dataset
- Understand what a dataset can look like

What do I want learners to be able to do?

- Extract information from a dataset
- Sort a dataset by different measures



Data Skills Description

This task makes use of secondary data to support learners in developing their ability to review and interpret a dataset. The activity starts by encouraging learners to think of questions that the dataset might answer and thus develop their “Problem” skills.

The secondary data is then analysed. Learners will have the opportunity to reorganise and restructure data to help them answer their questions (draw conclusions)

Blended vs Home Learning

This task can be done in the classroom, at home or using a blended approach.

If a blended approach is to be used then the recommended approach is to start the activity at home and complete it in school. The initial phase of the activity concentrates on developing questions and reviewing data. The second phase includes more maths skills which some learners may find easier to do within their classroom environment.

Differentiation

This task can be tailored between first and second level (ages 6 to 11) by varying the dataset used.

Pre-Requisites

This activity can be used to introduce learners to elements of PPDAC or to provide a further opportunity to develop their understanding.

The session should start by using the PPDAC introduction [here](#)



Introduction

Hold a discussion with the group about music. Start with favourite songs and artist and support the group to share their own favourites. Progress to asking what makes a good song, why might it be popular. Finally start to identify characteristics of a song and note them either on a board or encourage the learners to write them on a piece of paper. Characteristics can include.

- Song name
- Artist name
- Genre/Type
- Length
- Rank (popularity)

Exploring the dataset (suitable for home)

This task focused on the “**Problem**” step of PPDAC. We are encouraging learners to think about interesting questions about the data they have.

Look through the printable or access the data online.

What do you notice about the data, what can you find out? Can you think of any questions you would like to know the answer to?

Write down:

- 3 different genres of music in your dataset
- 2 songs with the same popularity score
- The song that will come first and last alphabetically

Organising & Analysing the dataset

This task if focused on the “**Analysis**” step of PPDAC. We are encouraging learners to review the dataset and identify useful information that may help them understand the questions they thought about in step 1.

If completing this task offline then it can be easier to do with the smaller dataset (20 songs) even if the learners are second level. The task is split into two, one set of questions for each dataset. Worksheets are available for each dataset.

Smaller Dataset

Use your dataset to complete the following tasks.



1. What is the most popular song?
2. What is the least popular song?
3. Group the songs by genre
 - a. How many songs are there in the pop category?
 - b. What categories only have 1 song in them?
4. Rewrite the table starting at the most popular song and ending with the least popular song.

Larger Dataset

Use your dataset to complete the following tasks.

1. What is the most popular song?
2. What is the least popular song?
3. Group the songs by genre
 - a. How many songs are there in the pop category?
 - b. What categories only have 1 song in them?
4. Which song is the best to dance to?
5. Which artist sings the song with the most beats per minute?
6. Identify 3 artists with more than one song in the dataset

The above tasks can be made easier if the data is sorted in excel (or similar spreadsheet package).

Teachers or Parents can encourage children to learn how to sort the data by following the instructions here: <https://youtu.be/KS9N4yAjuYQ>

Visualise your dataset

This task mixes the “**Analysis**” and “**Conclusions**” part of PPDAC. Creating a summary table continues the analysis phase and seeks to show how a large amount of data can be presented in a different way. Visualising the data can support both analysis and drawing conclusions. Learners should be encouraged to connect questions they asked at the start to the analysis they are doing the information they can extract from the visualisation.

We are now going to learn to create a visual representation of the data. Again this can be done online or offline.



Smaller Dataset

1. Add up the total score for each genre of music. Complete this table.

Genre	Total Score
canadian hip hop	
canadian pop	
country rap	
dance pop	
dfw rap	
electropop	
escape room	
latin	
panamanian pop	
pop	
reggaeton	
reggaeton flow	
trap music	

2. Create a bar chart of genre and total score. The chart can be created in a variety of different ways.
 - a. Draw it on paper
 - b. Use Lego, or similar blocks to create it on a table
 - c. Use sticks and other natural materials to create it outside
 - d. Use excel to create a chart in your spreadsheet.

The group can have an optional discussion about whether the highest scoring genre is therefore the most popular. This is an opportunity to consider the ideas behind averages. Learners could be asked to:

Review what are the 3 most popular songs, are these in the most popular genre?

What might cause the most popular genre to be different to the genre of the most popular song?

Larger Dataset

The following tasks are more suited to using a spreadsheet.

1. Create a table with 4 columns, Genre, number of songs, Total Popularity Score and average score
2. Fill in your table
 - a. Put each genre in the first column



- b. Find out how many songs are in each genre and enter it in column 2
 - c. Add up total popularity score for each genre and enter it in column 3
 - d. Calculate the average score by dividing the total popularity score by the number of songs and enter it in column 4
3. Create a bar chart of genre and average score in your spreadsheet software