

Unit/Topic: Creating a film based on data

Target age: 9+

Topic 4: Analysing data

Recommended Teaching hours: 1-3

Lesson Objective: Understand that we can analyse data in different ways and how this can help us make informed decisions

Lesson Overview & Outcomes (Please refer to [STATWARS® curriculum mapping document for KS2 Mathematics and Computing National Curriculum outcomes for this topic](#)):

This topic asks pupils to consider the data they have gathered and make informed decisions as a result of this. They will be able to use more than one form of analysis (descriptive and predictive). This can be as simple or as complex as required depending on what you want to achieve. Choose the software that you feel is appropriate for your class. However, the quality of data analysis will depend on the tools used in this process.

Key words: Messy/Tidy data, Descriptive analysis, Predictive analysis, Frequency distributions, Cross tabulation, Hypothesis

Suggested software/Resources: MS Excel, Google Sheets

Please refer to project overview and medium term plan for additional support

Lesson Structure:

(Based on 1 hour lessons – you may need more time to allow adequate data analysis) - **Guidance notes are provided on lesson PowerPoint where necessary. Please amend resources accordingly to suit your class.**

You can access the “Analysis support for teachers’ folder” to support your understanding of this topic.

Introduction:

Time (minutes)	Activities	Challenge/Support (Differentiation)	Assessment Strategies & Outcomes
5	<p>Pupils should be ready to do their analysis, and likely will have begun to make some initial observations of the data when collecting it anyway</p> <p>Slide 2. Ask each group to share at least 1 bit of information they have gathered/processed as a result of data collection. Plot this on the board and then ask them to suggest what good solutions might be based on the data they can now see – i.e. can they analyse it</p>	<p>Prompt pupils based on what the data is suggesting and help them bring it together to formulate some predictive analysis</p>	<p>Pupils will begin to articulate data findings</p>

Main Content:

Time	Activities	Challenge/Support (Differentiation)	Assessment Strategies & Outcomes
5	<p>Slide 3. Explain that pupils need to make sure what they have collected is organized and easy to understand, so that they can develop their solution (answer the question)</p>	<p>The level of sophistication will add natural challenge here</p>	<p>Pupils will be able to use at least one form of data analysis to support their decision</p>
5	<p>4.1. Slides 4-6. Introduce key words Messy/Tidy data and the importance of doing this. Their data should look like the examples, or similarly organised</p>	<p>Challenge 1: Pupils can choose to produce simple bar charts and graphs, but some may look to do further descriptive analysis using cross tabulation or scatterplots (see project overview)</p>	
5	<p>4.2. Slide 7. You can support pupils in their understanding of how to ask questions of the data to give it some meaning. You may want to get them to write down some questions they would ask before showing them the slide</p>		
20	<p>4.2.1. Descriptive Analysis. Slides 8-13. Once pupils are confident they understand how to interrogate the data they can begin to search for the answers and illustrate them. You can choose 1 or more of the examples to show pupils, depending on ability and how you</p>		

	<p>want them to analyse the data</p> <p>They can use a suitable software of their/your choice providing it can help illustrate the quantitative/qualitative data. Excel or Google Sheets will be an obvious choice here</p> <p>Remember – as they are in groups this work can be divided amongst each member to reduce time needed.</p>		
15	<p>4.2.2 (Part 2) – Predictive Analysis (this can be done the following lesson)</p> <p>Slide 14. Once they have completed their descriptive analysis they need to make their decision for the solution to the problem – i.e. answer the question. Their answer must be supported by evidence extrapolated from the data. Some of this can be in text format but they should produce some graphical representation of the data also. It is important however, to remind them that gut instinct and human intuition can support the decision, and solely relying on data can hinder you</p> <p>Remember – as they are in groups this work can be divided amongst each member to reduce time needed.</p>	<p>Challenge 2: Slides 15-19. Pupils can create a class survey and/or decision tree that helps them test their solution. They can carry this out during lesson time or as homework and complete the survey with their family and friends. Use decision tree template provided.</p>	<p>Pupils will produce a list of recommendations for their film choice, which should be supported by charts/graphs. They will be able to provide reasons for their decisions</p>

Concluding the lesson:

Time	Activities	Challenge/Support (Differentiation)	Assessment Strategies & Outcomes
5	Pupils may need this time to finalise their work. Observe the completed work and assess the completion through observation whilst walking around the room. Question their decisions where necessary	Differentiation by teacher support	Groups will have proposed an answer to the project question

Homework:

Slide 21: It is likely that pupils will still want to develop their answers/research, so ask them to consider this for homework. Next lesson they can discuss this and refine their decision when they create their posters. Also, ask pupils to find some film posters that you like the look of and think why they like them. Take photos of ones they see whilst outside or on buses. If they have any to show in class, bring them in.

Evaluation:

- ▶ What went well in the lesson?
- ▶ What needs addressing/revisiting?
- ▶ What might you do differently for next time?