Unit: Creating a Successful TV Show or Film Using Data

Target age: 11+

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 (*Linked to Scottish curriculum for Excellence Numeracy & Mathematics and Technologies: experiences and outcomes – Third/Fourth level)*

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.

Numeracy & Mathematics: MNU 3-01a, MNU 3-03a, MNU 3-07a, MNU 3-09b, MTH 3-15a, MTH 3-16a, MTH 3-17c, MNU 3-20a, MTH 3-20b, MTH 3-21a, MNU 3-22a, MNU 4-03a, MNU 4-07a, MTH 4-07b, MTH 4-13a, MTH 4-13d, MTH 4-15a, MNU 4-20a, MTH 4-20b, MTH 4-21a, MNU 4-22a

Technologies: TCH 3-05a, TCH 3-08a, TCH 3-13b, TCH 3-15a, TCH 4-07a, TCH 4-08a, TCH 4-09a, TCH 4-13a, TCH 4-15a

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

Suggested software/Resources: MS Excel, Wordle, Orange, Codap, The analysis can be done in numerous ways depending on the confidence of the teacher/class – See "Tools to support delivery" section for more suggestions/guidance.

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

©Primary Engineer® 2019 STATWARS® Film and TV Series Resources

Lesson Structure:

(Based on 1 hour lesson – you may need more time to allow adequate data analysis)

Please use the "Analysis support for teachers" folder to support you for this lesson, it provides detailed examples of what to do, with explanations of how to do it!

Introduction:

Time (minutes)	Activities	Challenge/Support (Differentiation)	Assessment Strategies & Outcomes
5	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 **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 a good solution might be based on the data they can now see – i.e. can they analyse it	Prompt students based on what the data is suggesting and help them bring it together to formulate some predictive analysis	Pupils will begin to articulate data findings

Main Content:

Time	Activities	Challenge/Support (Differentiation)	Assessment Strategies & Outcomes
5 **5** **20**	**4.1 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) **Slides 4-6**: Introduce key words Messy/Tidy data and the importance of doing this. Support their understanding by illustrating the slides Their data should look like this or similarly organised **4.2 Slide 7**: Support students 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 **4.2.1 Slides 8-12**: Once pupils are confident and they understand how to interrogate the data, they can begin to search for the answers and illustrate them. Discuss examples of what this might look like. They can use a suitable software of their/your choice as long as it can help illustrate the quantitative/qualitative data, such as MS	The level of sophistication will add natural challenge here **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) and create a survey or decision tree to support their predictive analysis	Pupils will be able to use at least one form of data analysis to support their decision

©Primary Engineer® 2019 STATWARS® Film and TV Series Resources

	Excel Codap is a useful piece of free online software pupils could access in school and at home to develop their data analysis https://www.youtube.com/watch?v=Wrtk4JhVMkM. The following help link explains everything you need https://codap.concord.org/help/ Or show/use this tutorial video to support the pupils to use their collected data https://www.youtube.com/watch?v=Dm7DFi6Iums		
15	**4.2.2 Slides 13-15** - Once they have completed their descriptive analysis, they need to use predictive analysis 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. 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	**Challenge 2:** 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.	

Concluding the lesson:

Time	Activities	Challenge/Support (Differentiation)	Assessment Strategies & Outcomes
5	**Slide 16**: Pupils may need this time to save and 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:
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/TV show 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?

©Primary Engineer® 2019 STATWARS® Film and TV Series Resources