Year 3 Handling Data 1 Showing my device time (Core)

Timing 4 sessions of approximately 45 minutes with options for extended activities	**Children will** • Explore different ways to represent data: tally, database, datalogger, charts • Explore a ready-made database • Use a datalogger to investigate shadows around the school • Choose the best way to collect, organise and present data about the games children play on electronic devices
e-safety links I can make good choices about the amount of time I spend online.	**Objectives** **Handling Data** • I can collect data to help me answer a question • I can talk about the different ways data can be organised • I can search a ready-made database to answer questions. • I can add to a database. • I can use a data logger to monitor changes and can talk about the information collected.
Links to other learning: **e-Safety/ PSHE:** Recognise an appropriate amount of time to use an electronic device. **Maths :** Use appropriate software and apps to present and interpret data. Use the information to solve one and two step problems. **Science:** Shadows in a local environment	
Resources https://www.j2e.com/jit5#chart Google for Education Sheets Office 365 Excel 2Graph (2Simple Infant Video Toolkit or Purple Mash) Easychart Free App could be used on tablets Data logger or Google Science Journal App Robinson Crusoe BBC animation Creating and understanding charts Games spreadsheet Y3 Games presentation and handout	**Preparation** • Download slides to support learning experiences • Download Games data spreadsheet as an Excel file OR if you have a google account choose file, make a copy; to be able to edit your own version of the spreadsheet. • Copies of Games we play handout out for children to work on in pairs • Set up a link for children to access https://www.nationalgeographic.com/animals/facts-pictures/ (or use QR code on slide 11) • Install Google Science Journal on tablets, phone or Chromebooks (note you will need to allow access to microphone and camera) • **Or** use a Data Logger that will monitor light. Microbits or Picoboards can be used as simple light sensors. Check you can set up a device to monitor changes in light for session three. • Look at What's My Gameplan resources to follow up healthy approach to playing e-games.

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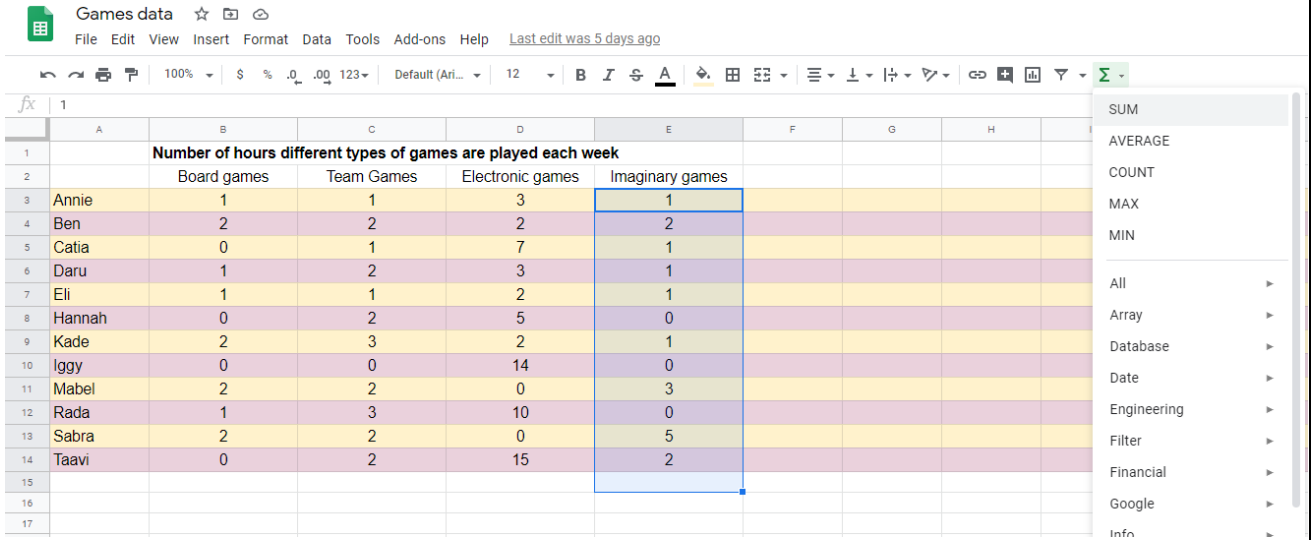
	Expectations	Activity	Success Criteria
1	**Handling Data** I can collect data to help me answer a question I can talk about the different ways data can be organised	**Exploring and recording data** **Session 1 - 3 provide experiences for children to see different ways that data is collected. Session 4 is an opportunity to apply their learning.** • Ask about data children have collected previously. Use children's ideas to provide examples of different data that could be collected (e.g. how many children in class have brown hair, black, blonde etc?) • Show the Robinson Crusoe animation from the BBC. • Ask the children where they have seen tally charts being used before. Why do we use a tally chart? What benefit is there to using a tally chart? (Relate to information received in Robinson Crusoe animation). • Talk about how important it is to know what the data means. Robinson Crusoe's lines only made sense in a context. It showed a number of days. This was important for him to know when he would expect to see the ship. *We can say numbers but without their units of measure they wouldn't mean anything.* • What other groupings of the Robinson Crusoe' tally might be useful? *Do children recognise additional organisation such as circling hundreds could help in a quick assessment of how long he has been on the island?* • What can a tally be useful for? eg keeping score in games, counting the number of children going into lunch. • (Optional if you can allocate more time: Allow children time to use a tally to collect data.) • Look at slide 2 of Year 3 Games data presentation. What could these numbers mean? • Look at slide 3 What extra information do you have? What do you think now? • Look at slide 4 Was anyone correct? How long is an hour? *Can children identify anything they do for one hour? Talk about periods of time to see if children can think about an hour of time spent doing different things.* • Ask questions to increase understanding of the data they are looking at in slide 4 eg:	Gold: Can I think of my own questions about collected data and make a chart of my own data? Silver: Can I answer a question about collected data and make a chart of my own data? Bronze: Can I make a chart with my data?

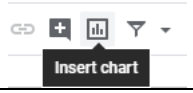
- Who spends the most time on a computing device?
- Who likes playing board games?
- Who has a good imagination?
- Who might like to play sports?
- What else can you tell from the data?

- Use the opportunity to talk about 'balanced lifestyle'. Which games are we best playing? You may want to identify 'imaginary games' as something the class could practise doing? Or maybe to challenge children to get families playing board games?
- Model adding your data to the table. Show how you can use the spreadsheet to add to total for each column. Drag down cells and select function to SUM.



	A	B	C	D	E
1		Number of hours different types of games are played each week			
2		Board games	Team Games	Electronic games	Imaginary games
3	Annie	1	1	3	1
4	Ben	2	2	2	2
5	Catia	0	1	7	1
6	Daru	1	2	3	1
7	Eli	1	1	2	1
8	Hannah	0	2	5	0
9	Kade	2	3	2	1
10	Iggy	0	0	14	0
11	Mabel	2	2	0	3
12	Rada	1	3	10	0
13	Sabra	2	2	0	5
14	Taavi	0	2	15	2

- How does the technology help us? Talk about this as an example of the technology saving us time.
- Model how quickly you can generate a chart using the spreadsheet. Drag across the totals and select 'Insert Chart'



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		• Give 'Games we play' handout to pairs of children. Can they identify whose data is represented by each chart? • Ask children to use www.j2e.com/jit#chart (or PurpleMash 2Graph or other app) to represent the games they play over a week. (**Children working above age expectations could be given a copy of the spreadsheet to add their data and create a chart**.) • Let children select other ways to show their data using the options on the left of the screen (slide 10). Which do they think is the best way to present how much time they spend on each type of game? • Subscribers to j2e.com can save their work and return to it to develop further. Non-subscribers can use snipping tool or screen capture to keep a copy of their chart. • Review the different ways children have discovered they can present data. Use BBC graphs and charts to reinforce and extend the discussion.	
2	**Handling Data** I can search a ready-made database to answer questions. I can talk about the different ways data can be organised	**Using a ready-made database** • Look at National Geographic animal database as a class and/or explore in pairs. How many types of data does it include? *Image, text, number* • What is the difference between this data and the data we have used a tally to collect? *Check children recognise that sometimes we need to do more than to count data and that a database lets us collect different kinds of data at the same time.* (The concept of a database is explored more fully in Y3 Handling Data 2.) • Model asking a question about the animals/an animal in the database; and finding the answer. • Let children work in pairs to explore the database. • Ask the children to write two questions on pieces of paper. Tell them they must remember the answers! • Swap the questions between appropriate pairs. Can the children find answers to the questions? • Ask the children to jot down all the different kinds of data they can think of. Check they	Gold: Can I ask questions about a set of data, and find answers to questions in a ready-made database? Silver: Can I answer a question about a ready-made database? Bronze: Can I explore a ready-made database?

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		recognise that photos and words can be data as well as numbers. BUT you always need to know what the numbers, words or photos are representing.	
3	**Handling Data** I can collect data to help me answer a question	**Using a data logger OR data logging app** • Set up device to monitor light before the session begins. For Google science journal, open the app, add a new experiment (**+**)and open the sensor card. Click the **Settings** cog on the first sensor and select only the **Brightness sensor**. Move hand or object over sensor. Can children spot what is changing? • Tilt device to see changes to the line measuring brightness as EV (exposure value). What is the highest measurement? What is the lowest measurement? • Ask children to predict which places in the classroom will have the highest / lowest light readings. What reason do they give for their prediction? Give children the opportunity to take readings in different places. Which predictions were correct? • How does light change in our playground? Use pair chat and feedback to talk through how this could be investigated. Focus children with appropriate questions eg What will make light change? What makes the difference? How could we measure this? • Plan investigation together and give the children opportunities to discuss the data provided by the data logger/Science Journal app. • Can children recognise the type of data they have used in the investigation – *numbers as a measurement.*	Gold: Can I recognise the type of data to collect to answer a question? Silver: Can I collect data to answer a question? Bronze: Can I spot changes in data?
4	**Handling Data** I can collect data to help me answer a question	**Investigating a question and presenting findings** • Tell the children that the headteacher has been asking about the amount of time that children are playing electronic games outside school, and the types of games they play. How can we find out about this? the different types of data the class has used in the previous three sessions. What kind of data would we need to collect to answer these questions? Review What information would we need to present? What is the most useful way to collect the data? • Collect ideas from the children. Do they recognise ○ the most appropriate way to collect data (remind children of the tool they used in	Gold: Can I use my own data to create an appropriate chart and use it to answer a question? Silver: Can I answer a question about collected data using a chart I have created? Bronze: Can I present collected

		session one, ○ the two types of data? – *numbers of children who play different games, time playing games.* • Split class into groups of 3 or 4 to plan their investigation. Some to investigate time spent playing games (those confident with concept of time) and some investigating the number of children who like playing different games. ○ How will they collect data? *Do they recognise the difference between counting number of children which could use a tally and surveying the time spent playing games?* ○ How will they present data? Confident children could use a Google spreadsheet to record and present data. Remind children of the different types of chart they could use (slide 10.) • Ask children to recap their learning so far. What is data? Where does it come from? How did we present the data collected? What was difficult about the method that we used? Allow children time to discuss these issues in pairs or small groups and then feedback to the class, drawing out the main points. (It was hard to see how long each child spent playing games etc.) • Allow children time to carry out investigation, collecting, recording and presenting outcome. If additional time is available, they could include data from children in other classes. • What questions can we answer looking at the data collected? Choose some children to share their question and use the graph to find the answer. Load some children's graphs using their own data (by clicking the yellow folder icon and selecting the saved file) and ask children, in pairs or small groups, to think of a question that the graph can answer. • Decide on the information the class will present to the headteacher to help them understand the games they play and how much time they spend playing games. • Use activities and Game break cards on What's my Gameplan page of website to reinforce healthy lifestyle messages around playing electronic games.	data in a vertical bar chart?