A year of statistics at school (Years 1-3) could be

When planning a mathematics and statistics programme for the year it is important to plan for recurring opportunities for statistical investigations and for key language to be utilised.

Year One	Term 1	Term 2	Term 3	Term 4
Teaching sequence outcomes	*Support students to:* • pose summary investigative questions about a group and for which the data will have categorical variables that classify objects or individuals into groups or categories (e.g., colour, brand), and anticipate what the data might show • collect data for one variable by making observations or questioning others, and discuss how the data-gathering process might affect other people • collect categorical data for one variable • create and make statements about data visualisations (e.g., picture graphs, physical dot plots) for categorical data, giving the frequency for each category • choose statements that best answer the investigative question • agree or disagree with others' statements about simple data visualisations (e.g., picture graphs, physical dot plots)			
Longitudinal activity	Fabulous Feet (CensusAtSchool) This lesson explores one way for ākonga to explore practical ways to answer an investigative question about foot length. By doing this in a practical way they will begin to understand how the PPDAC cycle works to give us information about our world. Term 1: Do the lesson (keep the paper feet!) Terms 2-4: Revisit and remeasure.			
Focus lessons	Cats and Dogs (CensusAtSchool) This lesson uses the PPDAC cycle to explore an investigative question that will appeal to Year One ākonga. Kaiako can take the lesson further by following the ideas provided to make this lesson into a series of lessons. Created by NZ Maths I like toys (Unit of work) In this unit we explore ways to pose and answer investigative questions about our favourites by gathering and analysing data and discussing the results.	Pizza Party (CensusAtSchool) A statistical enquiry aimed at Year 1 ākonga, around designing pizza toppings for a pizza party. This lesson has strong literacy links to the letter p. Created by NZ Maths Healthy hands (Unit of work) The purpose of this unit is to conduct a statistical investigation to answer a health question such as, "does washing my hands keep me from getting sick?"	Carry Your School Bag (CensusAtSchool) This lesson explores an everyday context using the PPDAC cycle to show ākonga that statistical ideas are everywhere, and we can collect data to answer questions that are interesting to us. Created by NZ Maths Asking about shoes (Rich mathematical activity) The purpose of this activity is to engage students in setting up for a statistical investigation by posing a question within the context given. Not enough drawers (Problem solving) This problem is about being able to sort everyday objects into categories.	Self-generated questions for a statistical enquiry in your class. Created by NZ Maths Christmas Tree (Problem solving) This problem involves sorting objects into categories and then counting them. The Garden (Problem solving) This problem involves sorting objects into categories and then counting them.
Maintenance activities E.g. oral language rich, E.g. in play-based learning	Opportunities to make use of comparative language. - Bigger, smaller, the same as, most, least Collecting weather data daily.	Opportunities to sort items into categories (buttons, loose parts, leaves, twigs...) The same as, more, less, colours, shapes, category, data, preference, Collecting weather data daily.	Opportunities to find groups within groups during sorting activities. Collecting weather data daily.	Sorting, comparing and stating findings. Collecting weather data daily.
		Preschool Data Toolbox Collect data, create graphs, and analyse your findings in the *Preschool Data Toolbox* app! Choose one of six investigations with preschool-appropriate research questions or create your own investigations and turn them into a data story. These data collection and analysis activities help children to engage in meaningful mathematics while developing computational thinking and problem-solving, communication, and inquiry skills.		
Vocabulary	**PROBLEM** variable categorical variables	**DATA** collect data record multivariate data sort data [into categories]	**ANALYSIS** data visualisations (graphs) picture graph counts most popular/common least popular/common	**PPDAC cycle** problem, plan, data, analysis, conclusion (PPDAC)

<table>
<tr><th>Year Two</th><th>Term 1</th><th>Term 2</th><th>Term 3</th><th>Term 4</th></tr>
<tr><td>Teaching sequence outcomes</td><td colspan="4">Support students to:
pose summary investigative questions about a group for which the data will have categorical variables, and anticipate what the data might show (e.g., which outcomes might be more frequent than others)
use survey and data-collection questions to collect data, identify who and what the data measures, and discuss how the data-gathering process might affect other people
collect categorical data for more than one variable
create and make statements about data visualisations (e.g., picture graphs, dot plots) for categorical data, comparing the frequencies of categories
choose statements that best answer the investigative question
match statements made by others with features in simple data visualisations and agree or disagree with the statements</td></tr>
<tr><td rowspan="2">Longitudinal activities</td><td colspan="4">Lost Teeth (CensusAtSchool)
A statistical enquiry aimed at Year 2 ākonga, around lost teeth. This includes follow up suggestions for future discussions and data analysis over time.

Term 1: Do the activity. Term 2-4: Revisit and add to the graph. Term 4: Consider what might happen next year.</td></tr>
<tr><td colspan="2">Lost Property (CensusAtSchool)
Early Term 1: This lesson introduces Year 1 students to exploring, graphing, and interpreting categorical data through the context of lost property in their school. In a teacher-supported lesson, students are encouraged to organise and learn from physical data, to transition to icon bar graphs and to engage in the entire PPDAC cycle.</td><td colspan="2">Lost Property
Early Term 3: Revisit and look at seasonal changes.</td></tr>
<tr><td>Focus lessons</td><td>Created by NZ Maths
Greedy Cat (Unit of work)
In this unit we explore ways to pose and answer investigative questions about cats by gathering and analysing data and discussing the results.</td><td>Data Cards Set A

Created by NZ Maths
Match ups (Unit of work)
In this unit, we make statements about data displays, decide if statements made by others match the data shown, and match appropriate statements to a data display.</td><td>Data Cards Set B

Self-generated questions for a statistical inquiry in your class.</td><td>Data Cards Set C

Self-generated questions for a statistical inquiry in your class.</td></tr>
<tr><td>Maintenance activities
E.g. oral language rich</td><td colspan="4">Preschool Data Toolbox
Collect data, create graphs, and analyse your findings in the Preschool Data Toolbox app! Choose one of six investigations with preschool-appropriate research questions or create your own investigations and turn them into a data story. These data collection and analysis activities help children to engage in meaningful mathematics while developing computational thinking and problem-solving, communication, and inquiry skills.
Opportunities for sorting, finding groups within groups, labelling variables and categories.
Opportunities to collect data across the curriculum.
Opportunities to discuss data across the curriculum.</td></tr>
<tr><td>Vocabulary</td><td>PROBLEM
investigative questions
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categorical variables</td><td>DATA
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gather
record
multivariate data
sort data [into categories]</td><td>ANALYSIS
data visualisations (graphs)
picture graph
tally
dot plot
counts
describe
most popular/common
least popular/common</td><td>PPDAC cycle
problem, plan, data, analysis, conclusion (PPDAC)</td></tr>
</table>

Year Three	Term 1	Term 2	Term 3	Term 4
Progress outcomes & teaching sequence	*Support students to:* • pose summary investigative questions about everyday situations, using categorical data and discrete numerical (whole number) data, including about identifying the variable and the group of interest, and anticipate what the data might show • use survey and data-collection questions to collect data, identify who and what the data measures, and discuss how the data-gathering process might affect other people • collect, record, and sort data, or use secondary data sources provided by someone else • create and make statements about data visualisations (e.g., picture graphs, dot plots, bar graphs) for categorical and discrete numerical data • choose statements that best answer the investigative question, reflect on findings, and compare them with anticipated outcomes • identify relevant features in others' data visualisations, connect these to descriptive statements, agree or disagree with the statements, and suggest improvements			
Longitudinal	Leave your lunchbox (CensusAtSchool) By following the PPDAC cycle ākonga will have an opportunity to look at the actions taken daily, collecting data to support their ideas and impact in a positive way at school.			
		Survey your environment (CensusAtSchool) These lessons explore one way for ākonga to explore practical ways to answer an investigative question and begin to understand how the PPDAC cycle works. They will see the link between Citizen Science data collection and how this can be used to make generalisations that give us information about our world to help us make decisions.		Survey your environment (CensusAtSchool) - repeat These lessons explore one way for ākonga to explore practical ways to answer an investigative question and begin to understand how the PPDAC cycle works. They will see the link between Citizen Science data collection and how this can be used to make generalisations that give us information about our world to help us make decisions.
Focus lessons	Created by NZ Maths Parties and favourites (Unit of work) In this unit we conduct a number of investigations using a party or favourites as a theme. Students count, compare, organise, analyse, display and interpret data.	Pineapple on Pizza? (CensusAtSchool) Ākonga explore classroom preferences around pineapple on pizza. Created by NZ Maths Voting vitality (Unit of work) In this unit, which explores the context of voting, students will become familiar with and apply the five key steps of carrying out a statistical investigation. Connects to Social Studies too.	Self-generated questions for a statistical inquiry in your class.	Self-generated questions for a statistical inquiry in your class.
Maintenance activities E.g. oral language rich	• Opportunities for sorting, finding groups within groups, labelling variables and categories. • Opportunities to collect and present data across the curriculum. • Opportunities to discuss data across the curriculum.			
Vocabulary	**PROBLEM** investigative questions variable categorical variables numerical variables summary situations investigative summary questions	**PLAN** primary data survey questions conducting surveys secondary data **DATA** collecting data record sort data	**ANALYSIS** frequency data visualisations picture graph tally charts dot plot bar graphs analysis questions statistics describe data most common least common interpreting data	**CONCLUSION** answering investigative questions **PPDAC cycle** statistical enquiry cycle problem, plan, data, analysis, conclusion (PPDAC)