Compare Data Displays, Language of Chance.

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Differentiate and Assess

Not every student will be ready to investigate this concept at this Level and so we will need to differentiate to ensure every student is learning at their leading edge. Select the Differentiate button on this screen.

Integrate

Every mathematical concept is integrally related to other mathematical concepts. Teaching and learning related concepts simultaneously develops deep relational understanding. Select the Integrate button on this screen.

Intervene

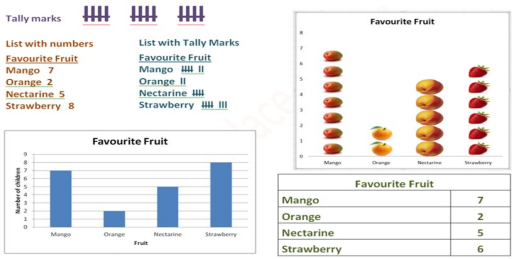
Some students may not yet be ready to investigate this concept at any Level, and so we will need to provide some intervention. Select the Intervention button on this screen.

COMPARE DATA DISPLAYS, LANGUAGE OF CHANCE.

EXPLICIT TEACHING PLAN OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE EXPLICIT TEACHING PLAN, INCLUDING STRATEGIC QUESTIONS, AND DESRIBING THE SEQUENCE WHICH WILL OCCUR OVER MULTIPLE LESSONS.

RESOURCES:THE SAME DATA DISPLAYED IN TABLES WITH TALLY MARKS, IN TABLES WITH NUMBERS, IN PICTURE GRAPHS, IN COLUMN GRAPHS, PENCIL, PAPER

WHAT COULD WE DO?	WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?
Children: • compare different displays of the same data, tally marks, a list, a table, a column graph, a picture graph, for example,  • discuss the advantages of each display • discuss the disadvantages of each display • make statements about the data using the language of chance • identify the data display that most easily allowed them to identify the chance	Children • ask one another questions about collecting data, recording it in a column graph, and creating column and picture graphs with technology, for example: ▸ What are the advantages of using tally marks / a list / a table / column graph / picture graph to display data? ▸ What are the disadvantages of using tally marks / a list / a table / column graph / picture graph to display data? ▸ How many people like mandarins? ▸ Which fruit is the most popular? ▸ Which fruit is the least popular? ▸ Which fruit is more popular than oranges but less popular than strawberries? ▸ Which data display allows us to most easily identify this? ▸ What is the chance of someone liking mangos best? ▸ What is the chance of someone liking oranges best? ▸ If you sold fruit, which fruit do you think you would sell the most of? ▸ If you sold fruit, which fruit do you think you would sell the least of?

COMPARE DATA DISPLAYS, LANGUAGE OF CHANCE.

EXPLICIT TEACHING PLAN

FULL EXPLICIT TEACHING PLAN, EMBEDDING DEEP RELATIONAL UNDERSTANDING, METALANGUAGE, AND QUESTIONS THAT MAY BE USED OVER MULTIPLE LESSONS.

WHAT COULD WE DO?	WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?
Children think about, talk and listen to a friend about, then have the opportunity to share what they already know.	▸ Today brings an investigation about chance and data. ▸ What do you know about chance and data? ▸ Talk about chance and data with a friend. ▸ Is anyone ready to share what they are thinking about chance and data?
Record, for example, chance is how likely something will happen	▸ We've investigated chance and data. ▸ And we found that chance meant how likely it was that something would happen. ▸ We described chance using words like impossible and possible, likely and unlikely, and certain and uncertain..
Record, data is information	▸ We found that data just means information. We found that we needed data to be able to work out chance! ▸ So when we have some data, we can work out the chance of something happening.
	▸ **We've investigated representing data using tally marks, in lists tables, picture graphs and column graphs.** ▸ But why do we have so many ways to represent data? Let's investigate!

Display some tally marks, a list, a table and a picture graph, for example,

Tally marks 𝍸 𝍸 𝍸

List with numbers

Favourite Fruit
Mango 7
Orange 2
Nectarine 5
Strawberry 8

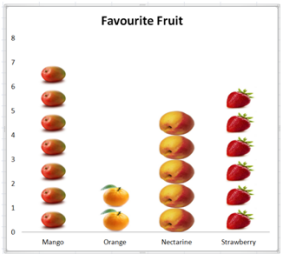
List with Tally Marks

Favourite Fruit
Mango 𝍸 ||
Orange ||
Nectarine 𝍸
Strawberry 𝍸 |||

Table

Favourite Fruit	
Mango	7
Orange	2
Nectarine	5
Strawberry	6

Picture Graph



- Here we have the same data represented using tally marks, in lists tables, picture graphs and column graphs.
- Let's investigate the advantages of each representation.

Display the list using tally marks, for example,

List with Tally Marks

Favourite Fruit
Mango 𝍸 ||
Orange ||
Nectarine 𝍸
Strawberry 𝍸 |||

- Let's start with the list using tally marks.
- Why do we use tally marks?
- Do we use tally marks when we collect data?
- How easy is it to see how many people like nectarines?
- Can we just find nectarines and count the tally marks?
- How easy is it to see which fruit is the most popular?
- Do we have to count the tally marks?
- How easy is it to see which fruit is the least popular?
- Do we have to count the tally marks?
- Is it easy to see which fruit is the second most popular?
- Do you think tally marks are most useful when we collect data, and when counting data, but not very useful when we want to know popularity?

Display the list using numbers, for example,

List with numbers

Favourite Fruit
Mango 7
Orange 2
Nectarine 5
Strawberry 8

- Let's look at the list using numbers.
- How easy is it to see how many people like nectarines?
- Can we just find nectarines and read the number?
- How easy is it to see which fruit is the most popular?
- Do we have to read all of the numbers?
- How easy is it to see which fruit is the least popular?
- Do we have to read all of the numbers?
- Is it easy to see which fruit is the second most popular?
- Do you think numbers are a little more useful than tally marks when counting data, but not very useful when we want to know popularity?

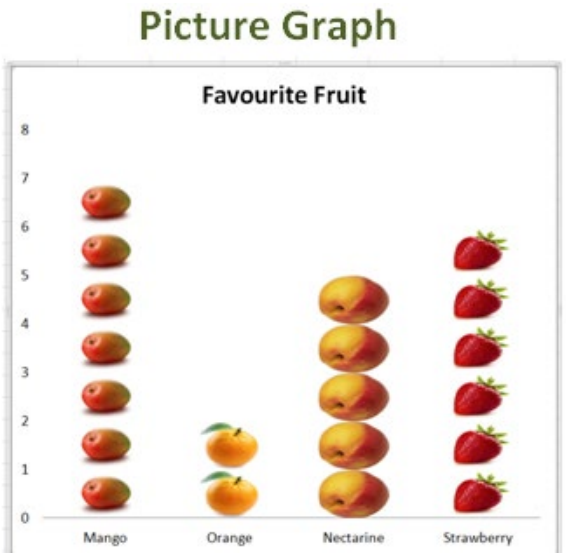
Display the table, for example,

Table

Favourite Fruit	
Mango	7
Orange	2
Nectarine	5
Strawberry	6

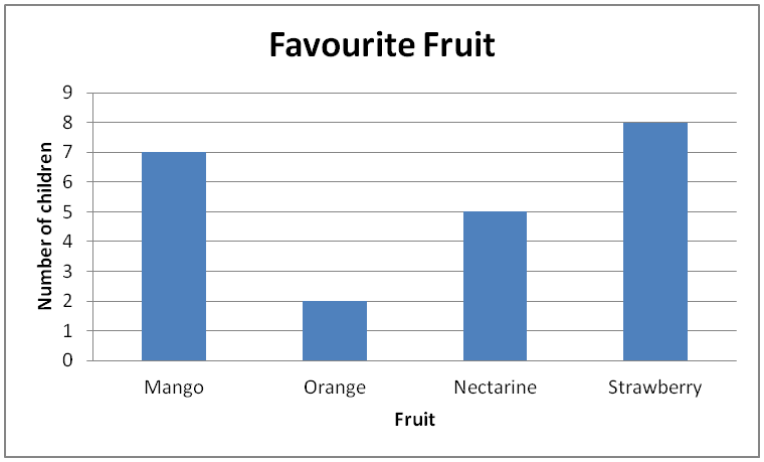
- Let's look at the table.
- How easy is it to see how many people like nectarines?
- Can we just find nectarines and read the number?
- How easy is it to see which fruit is the most popular?
- Do we have to read all of the numbers?
- How easy is it to see which fruit is the least popular?
- Do we have to read all of the numbers?
- Is it easy to see which fruit is the second most popular?
- Do you think numbers in a table are a little more useful than numbers in a list, when counting data, but not very useful when we want to know popularity?

Display the picture graph, for example,



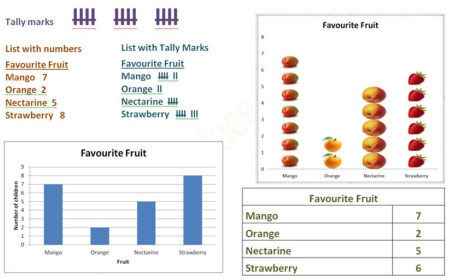
- Let's look at the picture graph.
- How easy is it to see how many people like nectarines?
- Do we need to find nectarines and then count the pictures?
- How easy is it to see which fruit is the most popular?
- Can we tell by which stack of fruit is the tallest?
- How easy is it to see which fruit is the least popular?
- Can we tell by which stack of fruit is the shortest?
- Is it easy to see which fruit is the second most popular?
- Can we tell by which stack of fruit is the second tallest?
- Do you think picture graphs are less useful when counting data, and very useful when we want to know popularity?
- But do picture graphs take a little time to construct?

Display the column graph, for example,



- Let's look at the column graph.
- How easy is it to see how many people like nectarines?
- Do we need to find nectarines and then go up the column to see what number it goes up to?
- How easy is it to see which fruit is the most popular?
- Can we tell by which column is the tallest?
- How easy is it to see which fruit is the least popular?
- Can we tell by which column is the shortest?
- Is it easy to see which fruit is the second most popular?
- Can we tell by which column is the second tallest?
- Do you think column graphs are less useful when counting data, and very useful when we want to know popularity?
- Do column graphs take a less time to construct than picture graphs?

Display the different displays, for example,



Children identify that 7 people like mangos best.

Children identify that the list or table with numbers allow us to most easily identify the number of people who like mangos best.

Children identify that mangos are the most popular.

Children identify that the column graph or the picture graph allow us to most easily identify the most popular fruit.

Children state that it is possible but not certain, that people will like mangos.

Children identify that oranges are the least popular.

Children identify that the column graph or the picture graph allow us to most easily identify the least popular fruit.

Children state that it is possible but not certain, that people will not like oranges.

- **Let's ask questions and make statements about the data using chance language.**
- How many people like mangos best?
- Could we state that 7 people like mangos best?
- Which data display allows us to most easily identify the number of people who like mangos best?
- Does the list or table with numbers allow us to most easily identify the number of people who like mangos best?
- Does a list or table allow us to easily answer 'how many' questions?
- Which fruit is the most popular?
- Could we state that mangos are the most popular?
- Which data display allows us to most easily identify the most popular fruit?
- Does the column graph or the picture graph allow us to most easily identify the most popular fruit?
- Is it certain that people will like mangos?
- Is it possible that people will like mangos?
- Which fruit is the least popular?
- Could we state that oranges are the least popular?
- Which data display allows us to most easily identify the least popular fruit?
- Does the column graph or the picture graph allow us to most easily identify the least popular fruit?
- Is it certain that people will not like oranges?
- Is it possible that people will not like oranges?

Children identify that nectarines are more popular than oranges but less popular than strawberries. Children identify that the column graph or the picture graph allow us to most easily identify the fruit that is more popular than oranges but less popular than strawberries.	▶ Which fruit is more popular than oranges but less popular than strawberries? ▶ Could we state that nectarines are more popular than oranges but less popular than strawberries? ▶ Which data display allows us to most easily identify the fruit that is more popular than oranges but less popular than strawberries? ▶ Does the column graph or the picture graph allow us to most easily identify the fruit that is more popular than oranges but less popular than strawberries?
Children identify that there is a good chance that someone might like mangos best. Children identify that the column graph or the picture graph allow us to most easily identify the chance of someone liking mangos best.	▶ What is the chance of someone liking mangos best? ▶ Could we state that there is a good chance that someone might like mangos best? ▶ Which data display allows us to most easily identify the chance of someone liking mangos best? ▶ Does the column graph or the picture graph allow us to most easily identify the chance of someone liking mangos best?
Children identify thatthere is a low chance of someone liking oranges best. Children identify that the column graph or the picture graph allow us to most easily identify the chance of someone liking oranges best.	▶ What is the chance of someone liking oranges best? ▶ Could we state that there is a low chance of someone liking oranges best? ▶ Which data display allows us to most easily identify the chance of someone liking oranges best? ▶ Does the column graph or the picture graph allow us to most easily identify the chance of someone liking oranges best?
Children identify that we predict we would sell the most mangos.	▶ If you sold fruit, which fruit do you predict you would sell the most of? ▶ Could we state that we predict we would sell the most mangos? ▶ Which data display allows us to most easily identify the fruit we predict we

Children identify that the column graph or the picture graph allow us to most easily identify the fruit we predict we would sell the most of. Children identify that we predict we would sell the least oranges. Children identify that the column graph or the picture graph allow us to most easily identify the fruit we predict we would sell the least of.	would sell the most of? ▶ Does the column graph or the picture graph allow us to most easily identify the fruit we predict we would sell the most of? ▶ If you sold fruit, which fruit do you predict you would sell the least of? ▶ Could we state that we predict we would sell the least oranges? ▶ Which data display allows us to most easily identify the fruit we predict we would sell the least of? ▶ Does the column graph or the picture graph allow us to most easily identify the fruit we predict we would sell the least of?

Different representations of the same data

back

List with Tally Marks

Favourite Fruit

Mango 𝍸 II

Orange II

Nectarine 𝍸

Strawberry 𝍸 I

List with numbers

Favourite Fruit

Mango 7

Orange 2

Nectarine 5

Strawberry 6

Favourite Fruit	
Mango	7
Orange	2
Nectarine	5
Strawberry	6