SUBJECT MEDIUM TERM PLANNING - SUBJECT

Year Group: 2	**TERM:** Spring 2	**Theme:** Pictograms

National Curriculum:

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- Create and debug simple programs
- Use logical reasoning to predict the behaviour of simple programs
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- Recognise common uses of information technology beyond school
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Context: - This unit introduces the learners to the term 'data'. Pupils will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Pupils will use the data presented to answer questions.	**Concepts:** **Information Technology** - developing their understanding of how computers can be used in different ways to create different types of artefacts. **Digital Literacy** - developing their knowledge of how to be a safe online user.	**Vocabulary:** **information** – facts or knowledge that have been gathered about something or someone **data –** numbers, words or figures that we can get information from **pictogram –** a chart that uses pictures to display data. **tally chart –** used to collect data about the number in each group quickly. **total –** the whole number or amount of something **organise –** when we arrange data into groups based on what they are **attribute –** a way to describe an object **properties –** the features of an item / object.

		compare – we can use pictograms and tally charts to answer questions about the data and identify similarities / differences.

Prior Knowledge: • Be able to label objects and group them based on different properties **(Year 1, Sum 1 – Grouping Data)** • Be familiar with the language of 'equal to', 'more than', 'less than', 'most', 'least' **(Year 2, Aut 1 – Maths curriculum)**	**Future Knowledge**: • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **(KS2)** • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **(KS2)**
End points /by the end of this unit pupils will… • Be able to record data in a tally chart. • Be able to enter data into a computer. • Be able to use a computer to view data in a different format. • Be able to use pictograms to answer simple questions about objects. • Be able to use a tally chart to create a pictogram. • Be able to create a pictogram to arrange objects by an attribute. • Be able to choose a suitable attribute to compare people. • Be able to collect data. • Be able to create a pictogram and draw conclusions from it. • Be able to explain how other people look and act differently online and offline.	**Crucial Knowledge**: Pupils need to be able to know how to collect data and present it digitally using an appropriate chart. Pupils need to be able to consider the advantages / disadvantages to presenting data digitally and their preferences towards each type. Pupils need to be able explain how people can look and act differently online and offline.

Lesson Number - 1

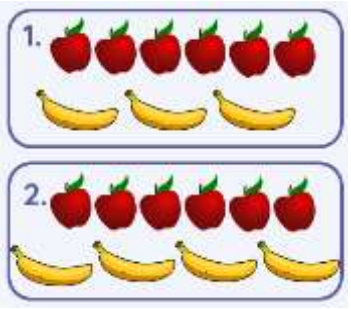
Key learning: To recognise that we can count and compare objects using tally charts	**Concepts:** Information Technology	**Lesson structure: Introduction, direct teaching, activities, key questions** **<u>Engage:</u>** Show pictures of different amounts of animals. Q – How many _____ can you see? (Pupils answer as quickly as they can). The final slide should have a mix of all the different animals (use the same amounts that you used separately). Q – Which animal is there the most of? Explain that although we have counted the animals in the previous activity, we don't have any record of what we counted. Now we might have to do some more work, such as counting the animals again, looking back at the other slide, etc. There must be a better way! **<u>Introduce:</u>** Explain that when we have lots of objects to count and compare, it helps to organise and record the data in a tally chart. Q – What do I do on the tally chart when I get to the number 5? When you make marks on a tally, you chunk them into groups of 5. Show an example of a tally. Q – Can you count in 5s to find the total of this tally?
Success Criteria: • I can record data in a tally chart • I can represent a tally count as a total • I can compare totals in a tally chart	**Suggested resources:** Flipchart Ipads for a Kahoot quiz Pictures of animals	

		P&C Use the same pictures as the engage and show a tally table. Point out the 3 heading in the table (animal, tally, total). Explain that the pictures are called 'data' Model crossing off an animal at a time and adding another tally into the correct place in the table. Once all the animals have been crossed off, they can add up the tally and write the answer in the 'total' column. This is turning out data into 'information'. ***NOTE –*** *Ask pupils to count out loud with you as you count up the tallys.* **Independent** Provide pupils with some data. This could link to the Under the Sea topic for Spring 2 (envelopes with data from The Deep for example). The data needs to be individual pictures of animals that the pupils will have to count up. Ask pupils to draw a tally chart in whiteboard on their tables, and use the data in the envelopes to fill in the chart. Pupils can then take a picture of this and upload it to their Seesaw accounts. **Deepen** Together on the whiteboard, answer some questions about the data that they have collected during the independent using key vocabulary (more than, less than, most, least etc.) Pupils to complete a Kahoot in pairs on interpreting tally charts. https://play.kahoot.it/v2/?quizId=481de74b-2161-4c10-92b1-32c3054b9e14 **Reflection** Tell pupils you are going to show them some tally charts. Explain that they are going to choose the set of data that matches the tally chart by showing one or two fingers.

Pupils should give reasons for their answers

Animal	Tally
	𝍸
	III

Fruit	Tally
	𝍸 I
	IIII



Eye colour	Tally
	𝍸 II
	𝍸 II

Vocabulary:

More than, less than, most, least, organise, data, object, tally chart, votes, total, information

Lesson Number - 2

Key learning:
To recognise that objects can be represented as pictures.

Concepts:

Information Technology

Success Criteria:

- I can enter data onto a computer
- I can use a computer to view data in a different format
- I can use pictograms to answer simple questions about objects

Suggested resources:

Paper / circles / cones to manually create a pictogram.

Ipads / Chromebooks

Access to Purple Mash 2 Count software

Lesson structure: Introduction, direct teaching, activities, key questions

Engage:

Recall learning from last week.

Q – What type of chart did we use to represent data last week? (Answer – a tally chart)

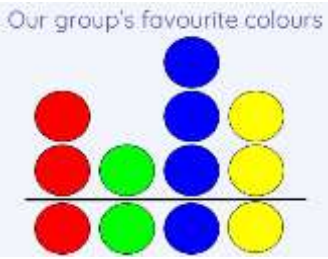
Show example of a part filled in tally chart. (Some tally boxes empty, some total boxes empty)

Q – Can you complete the table?

Introduce:

Q – What is a pictogram?
Tell pupils that a pictogram is a chart that uses pictures to display data. Explain that we can make them manually with pens and paper, or using a computer.

Show an example of a pictogram.
Q – What does this pictogram show?
The pictogram shows the favourite colours of a group of children. Each circle of colour represents one child's answer.



Q – Do we count the circles underneath the line?

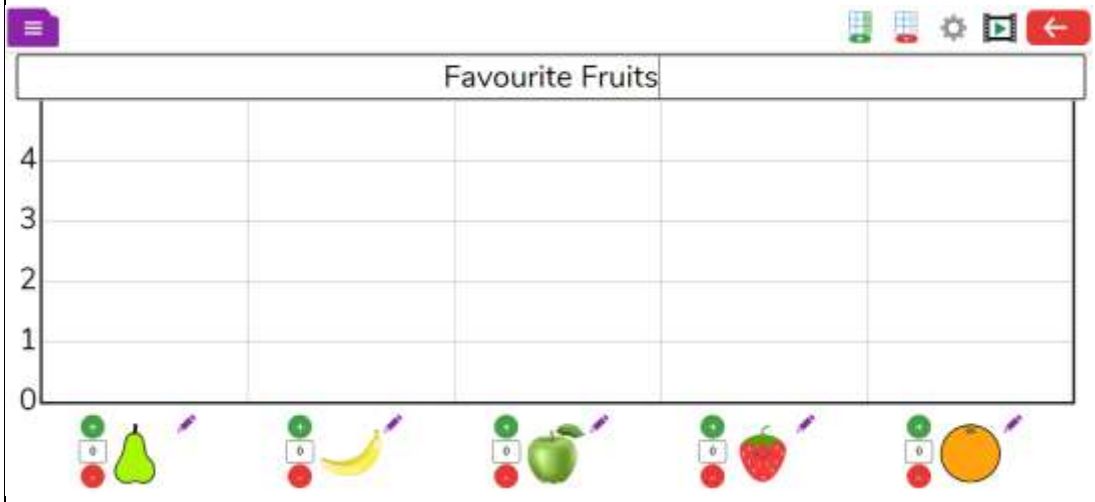
P&C

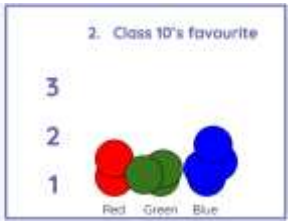
Tell pupils they are going to work in groups of 10 to create a pictogram to show their favourite colours (give them a choice of 4), but that this will be a race. Tell them they need to gather the data from the people in their group and show this in the form of a pictogram.

Physically show the learners the materials they will need to use. Possible ways in which this could be done:

- Large sheets of paper, pupils cut and stick coloured circles onto it to make the pictogram

		• 4 types of coloured cones (could be done outside) • 4 types of coloured spots (could be done outside) ***NOTE:*** *This activity shows how the manual creation of a pictogram compares to the ease of using a computer. If you do not have the time or appropriate materials, learners could create pictograms using pens and paper, but the differences between manual and computer-based pictograms will be less pronounced.* Establish the rules that pupils need to follow as they make their pictograms: ● Everyone has to choose their favourite colour from the list available (depending on the resources you are using ● You only have one vote, so you can only pick one colour ● Everyone has to help make the pictogram ● Once the pictogram is made you need to work out as a group what your favourite colour is and sit down. Once everyone is finished, discuss key questions: Q – What was your group's favourite colour? Q – How do you know? **<u>Independent</u>** Tell pupils they are now going to use a computer to enter some data and create a pictogram. Model how to access the chosen software (Purple Mash - 2 Count). 1. Log in to Purple Mash 2. Search 2 Count and click on the picture 3. Select 'Simple Mode' Tell pupils you have asked your family what their favourite fruit is from your list: apples, bananas, oranges, pears, or strawberries. They could only choose one fruit from the list.

		Model how to: • Change the pictures at the bottom (click on the purple pen and then search their image.) • Add or delete columns (using the green plus and red minus top right) • Changing the title  Explain that each time a member of your family chose their favourite fruit you clicked on the picture of the fruit (or the green plus next to their chosen fruit). This is the data you collected. Model how to do this. (Pear 3, banana 5, apple 2, strawberry 6, orange 1) Tell pupils you have been asking the teachers in the school how they get to work each morning. Give them some data of teacher's answers and ask pupils to create a pictogram to represent this data. Remind pupils they will need to do the following **before** they start entering the data: • Change the images at the bottom • Change the number of columns

		• Change the title Give pupils time to create their pictograms. **<u>Deepening</u>** Tell pupils they are now going to answer some questions about their pictogram. Use key vocabulary (more than, less than, most, least) Challenge question – How many teachers do you think were asked altogether? Questions can be printed on a sheet and then stuck into discovery books. ***NOTE –*** *use pictures within the questions to support lower ability readers / have multiple choice questions where pupils circle the correct image.* Once pupils have finished answering their questions, they can save their work on purple mash using the red arrow button and pressing "Save & Exit". **<u>Reflection</u>** Q – How do computers help us when we make pictograms? KEY ANSWERS 1. computers help us to set our work out easier and neater. 2. It is quicker to make a pictogram on a computer than drawing / cutting and sticking / finding objects 3. Computers makes it easy for us to enter data.  
Vocabulary: **Pictogram, enter, data, tally chart, compare, more than, less than, objects, count**		

<table>
<tr><th colspan="3">Lesson Number - 3</th></tr>
<tr><td>Key learning:
To create a pictogram</td><td>Concepts:

Information Technology</td><td rowspan="2">Lesson structure: Introduction, direct teaching, activities, key questions

<u>Engage:</u>

Q – what 2 types of chart have we looked at so far? (Tally chart and pictogram)

Q –What is the difference between the two types of chart?

<u>Introduce:</u>

Tell pupils that today you would like to find out what the class's favourite fruit is.

Tell pupils you have put cards showing five different pieces of fruit around the classroom, and you would like them to stand next to their favourite from the list: apples, pears, bananas, oranges, and strawberries.
If possible, take a photo of the groups scattered around the classroom.

Q - 'What is the most popular fruit?' ' How do we know?'

Q - 'Which is the least popular fruit?' 'How do we know?'

Explain that by counting each of the sets of people next to the different fruits we can begin to make comparisons, but that this is tricky as we might lose count or have to count groups of people multiple times.

Q - 'Is there a better way to do this?'

Tell pupils they will now make a human pictogram with the data and see which is easier to compare. Lay the fruit cards down in a line and invite the children to sit in lines next to their favourite fruit. This should represent the layout of a pictogram.

If possible, take a picture of the pupils and show this on the interactive board. Display the image alongside the group photograph taken previously.</td></tr>
<tr><td>Success Criteria:
• I can organise data in a tally chart
• I can use a tally chart to create a pictogram
• I can explain what the pictogram shows</td><td>Suggested resources:

Ipads / Chromebooks

Access to Purple Mash 2 Count software</td></tr>
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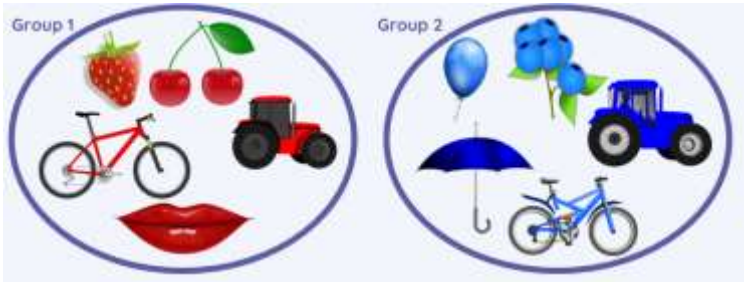
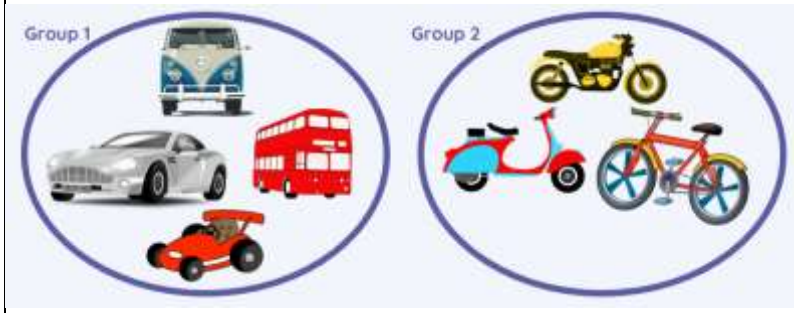
		Ask pupils which picture gives the clearest answer to the two questions: 'What is the most popular fruit?' 'Which is the least popular fruit?' Tell pupils that because of the way the data is displayed in the human pictogram, comparisons can be made more easily. **P&C** Tell pupils that today they are going to gather their own data using a tally chart. Suggested that pupils go on a minibeast hunt (however this can be adapted to meet the needs / resources available in school). Give pupils approx. 5 different items that they need to look for. If time is a factor, then images could be put up around the classroom / hall instead. Pupils record their findings using a tally chart. Remind pupils how to draw a tally chart before they go on their hunt. **Independent** Pupils will record the data that they have found from their tally chart onto a pictogram (using Purple Mash – 2 Count). Remind pupils how to change the settings as required. Allow time for pupils to create their pictograms based on their data. **Deepening** Q – What does your pictogram tell us? Discuss as a class what their pictograms tell us. Encourage use of the vocabulary more, less, most, least.

		Pupils to write some sentences in their books to explain what their pictograms show. Put key vocabulary on their Key Learning to encourage the use of those types of words. ***NOTE –*** *some pupils could record their ideas verbally using Seesaw.* **Reflection** Use thumbs up (3 – confident), thumbs middle (2 – unsure), thumbs down (1 – not confident) to reflect on the three statements. • I can organise data in a tally chart • I can use a tally chart to create a pictogram • I can explain what the pictogram shows
Vocabulary: **Tally chart, data, pictogram, explain, more, less, most, least, more common, least common**		

Lesson Number - 4		
Key learning: To select objects by attribute and make comparisons.	**Concepts:** Information Technology	**Lesson structure: Introduction, direct teaching, activities, key questions** **Engage:** Show an image of a pictogram. Q – What do you notice about the pictogram? Pupils to discuss with a partner first then feedback to class. Have key words on the screen to encourage pupils to use them in the answers (most, least, more, less). **Introduce:** Q – What is an attribute? An attribute is a way to describe an object. We can group objects using different attributes.
Success Criteria: • I can tally objects using a common attribute • I can create a pictogram to arrange objects by an attribute • I can answer more than/less than,	**Suggested resources:** Ipads / Chromebooks Access to Purple Mash 2 Count software Worksheets (available to print from Year 2 –	

most/least questions about an attribute	Data and Information – Lesson 4)	Q – How have these objects been grouped?  ANSWER – by colour. Colour is an attribute. Q – How have these objects been grouped?  ANSWER – by number of wheels. Number of wheels is an attribute.

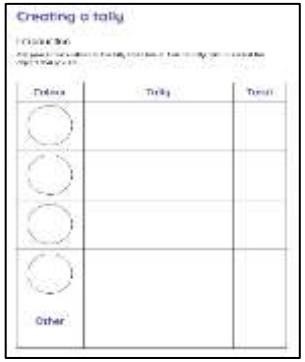
Q – How would you group these objects?

Discuss that there are 2 different attributes that could be used to group these objects (colour or number of wheels).

NOTE: *some pupils may try to make their own 'groups', e.g. the left circle is 'cars and buses and vans'. If they do this, explain that the attribute of a group can only be one thing, so they need to find what those cars, buses, and vans all share - like spotting patterns.*

P&C

Tell pupils that they are going to be tallying some objects based on a common attribute: colour.

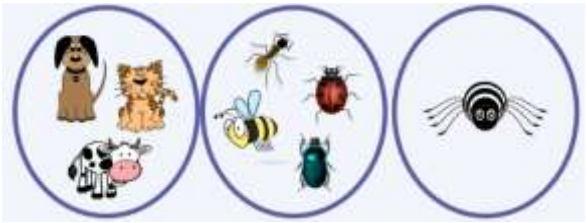
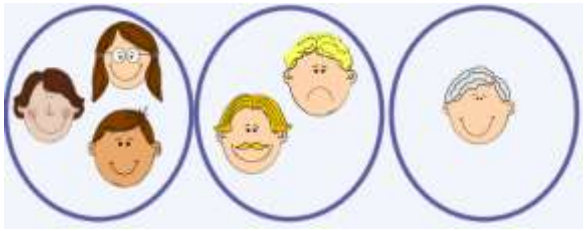


Pupils can use objects available in the classroom (e.g. chairs, cubes, pencil pots, counters etc.).

Pupils to be given a tally sheet. They need to choose 4 colours they can definitely see in the classroom. There also needs be a 'other' box. Explain that this is for anything that is not one of those colours.

Independent

Tell pupils they are going to create their pictograms using '2 Count', as they have in previous lessons.
If needed, remind them how to change the image, number of columns and title.

		Allow pupils time to use their data from their tally charts to create a pictogram. **Deepening** Discuss questions about their pictograms as a class. 1. Which colour was seen the most? 2. Which colour was seen the least? 3. Were any colours seen more than 5 times? 4. Were any colours seen less than 10 times? 5. Were any colours seen 0 times? **Reflection** Tell pupils you have grouped some objects using particular attributes, and that you would like the pupils to guess which attribute you have used.   
Vocabulary:		

Attribute, group, same, different, object, more than/less than, most/least

Lesson Number - 5		
Key learning: To recognise that people can be described by attributes	**Concepts:** Information Technology	**Lesson structure: Introduction, direct teaching, activities, key questions** **<u>Engage:</u>** Recap learning from last lesson. Q – What is an attribute? (See definition in previous lesson) Q – Can you give some examples of attributes (colour, number of legs, number of wheels) **<u>Introduce:</u>** Q - 'Can you think of any attributes you can use to describe people?' Pupils to discuss with a partner and then feedback to class. Let's play Guess Who? Give pairs a sheet with faces on and some counters. One partner secretly chooses a face. The other partner has to guess who it is by asking yes or no questions based on their attributes (e.g. are they wearing glasses?) Use the counters to cover up people who you know are no longer in the game. Then swap over. Explain to pupils that not all attributes of people are about how they look. Attributes can also be things that we can't see about a person. Ask pupils how many brothers they have.
Success Criteria: • I can choose a suitable attribute to compare people • I can collect the data I need • I can create a pictogram and draw conclusions from it	**Suggested resources:** Ipads / Chromebooks Access to Purple Mash 2 Count software	

		Ask them how many pets they have. Tell pupils to use their fingers to show you the answers. Ask pupils to show you, by putting their thumbs up, or thumbs down, whether they like tomatoes. Ask them whether they have a packed lunch today. Reiterate that these are all 'attributes' that tell us about people. Ask the learners what other attributes there could be that we can't see, for example the town they live in, or the month of their birthday. ***NOTE:*** *These have been chosen because they are not personal information (such as address or date of birth). If appropriate, you may want to talk to learners about personal information, and information we shouldn't share with strangers.* **P&C** Q - 'What would you like to find out about the people in our class?' Tell pupils we are going to choose an attribute and create a question based on it. For example, 'What is our class's favourite subject?' Tell pupils you would like them to choose 5 possible answers for people to pick from. Q - 'What happens if your favourite isn't on the list?' Allow pupils to offer their ideas, such as an 'other' category. Pupils to decide their question and gather their data into a tally chart. ***Possible Misconception:*** *Some pupils may not choose the right type of question, which will affect their ability to collect and present data. They might therefore benefit from choosing their question from a list of options.* **Independent** Tell pupils they are going to use the data they have collected to create a pictogram using 2 Count on Purple Mash.

		Pupils should save their work on Purple Mash. **Deepening** Q – What conclusion can you draw from your pictogram? Tell pupils the overall conclusion will be the answer to your question. Q – Can you draw any other conclusions? (e.g. Which was the least popular?) This could be recorded in one of 2 ways: • Written sentences into their discovery books. • Record a video of them explaining their conclusions on Seesaw. **Reflection** Complete the Project Evolve Pre-assessment Knowledge Map for Year 2 – Self Image & Identity. Use this to identify any gaps in knowledge and the strand that you would like to focus on in the next lesson.
Vocabulary: **Attribute, compare, tally chart, pictogram, more than, less than, most popular, least popular, conclusion**		

Lesson Number - 6		
Key learning: I can explain how other people may look and act differently online and offline.	**Concepts:** Digital Literacy	Use results of the knowledge map assessment from the previous lesson to identify any gaps in the pupil's knowledge.

OR I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.		As a result, decide which lesson outcome / activities will be most beneficial for your class / year group and plan accordingly. **Key Questions Lesson 1:** What ways can people be different to us online? How might someone show they are different to us online? Physical appearance - How could someone show things about their physical appearance online? Why might someone want to do this? Why might they not? Why would someone want to show a different physical appearance online to how they actually look offline? What is a profile picture? What might you include in it? What can you change about it? How can you change your appearance online? If you hid your face, what questions could your friend ask to determine that you are really you? What is most striking about you? Which bits of our identity do we include online, and which bits do we keep offline? **Key Questions Lesson 2:** What do you like to do online? What do you not like to do?
Success Criteria: **Lesson 1:** • I know that people can choose different pictures online to what they actually look like in real life. • I can explain why someone might want to change their appearance online. • I can describe ways in which people might make themselves look different online. **Lesson 2:** • I can recognise issues online that might make me feel sad, worried uncomfortable or frightened. • I know who I can go to for help. • I know how to ask for	**Suggested resources:** Project Evolve knowledge map Flipchart Project Evolve resources for "Year 2 – Self Image & Identity"	

help.		What can you do if something makes you feel sad/ embarrassed or upset online? Who can help you if something ever worries or upsets you online? How can you ask for help? What would you say? **<u>Reflection</u>** Complete knowledge map "assess impact" on the lesson outcome that has been taught to identify impact of learning.
Vocabulary: **appearance, online, identity, feelings, trusted adult**		