

<b>Arrivals and Departures</b> <b>ANSWERS</b>	Curriculum Area: Mathematics and Statistics, <b>Level 3/4</b>	Strand: Statistics
<b>Achievement Objective:</b>	<b>Statistical investigation</b> gathering, sorting, and displaying multivariate category and whole-number data and simple time-series data to answer questions	

Below is a picture of the arrivals and departures screen from Christchurch Airport. Study the picture and answer the questions.

All Arrivals   11:30			
Flight	From	Sched	Due Gate
JQ245	AUCKLAND	0945	1329 22 DELAYED
NZ2873	HOKITIKA	1025	1207 3
NZ509	AUCKLAND	1030	1130 18 LANDED 11:25
NZ8511	NELSON	1055	1117 10 LANDED 11:29
NZ5052	DUNEDIN	1125	1128 7
NZ6481	PARAPARAUMU	1125	1111 6 LANDED 11:15
NZ515	AUCKLAND	1130	1131 20
NZ8015	WELLINGTON	1130	5
NZ5080	QUEENSTOWN	1135	1203 12
NZ8703	PALMERSTON N	1140	1155 9
JQ247	AUCKLAND	1150	21
NZ5004	INVERCARGILL	1205	CANCELLED
NZ525	AUCKLAND	1225	1230 16
NZ8839	NEW PLYMOUTH	1225	1238 10
NZ501	AUCKLAND	1244	0900 CANCELLED
NZ8359	HAMILTON	1255	CANCELLED
NZ8941	WELLINGTON	1255	13
NZ2125	BLENHEIM	1300	1257 4
NZ5062	INVERCARGILL	1305	1346 8
NZ5603	WELLINGTON	1315	1334 12
NZ1919	AUCKLAND	1320	28

  

All Departures   11:30			
Flight	To	Sched	Brd Gate
NZ514	AUCKLAND	0945	
NZ5348	PALMERSTON N	1045	1130 8
NZ342	WELLINGTON	1050	19 DEPARTING
JQ298	SINGAPORE	1050	28 DEPARTING
NZ510	AUCKLAND	1105	1140 18
NZ8083	DUNEDIN	1130	1130 10
NZ5001	QUEENSTOWN	1150	1135 12
NZ516	AUCKLAND	1150	1135 16
NZ5005	INVERCARGILL	1210	1210 12
NZ8012	NELSON	1210	1155 5
NZ8478	NAPIER	1215	1200 9
JQ250	AUCKLAND	1220	1150 21 GO TO CHECKIN
NZ526	AUCKLAND	1230	1215 20
NZ8046	WELLINGTON	1235	1220 6
NZ8558	TAURANGA	1255	1240 10
NZ5053	DUNEDIN	1315	1300 7
NZ524	AUCKLAND	1330	1315 16
NZ8010	WELLINGTON	1330	1315 11
NZ2864	HOKITIKA	1400	1345 4
NZ2922	BLENHEIM	1400	1345 3
NZ5308	HAMILTON	1400	1345 8

1. What time was the photo taken? (11:30 am)
2. If you couldn't read English, what visual cue is there for the difference between arriving and departing? (icons of planes landing or taking off in top left corner - and in different colors)
3. How many flight items are shown on the Arrivals board? (21)
4. How many flight items are shown on the Departures board? (21)
5. How much time is covered in this photo of the Arrivals Board? (3 hours 35 minutes)
6. How much time is covered in this photo of the Departures Board? (4 hours 15 minutes)
7. How many flights arrive from Auckland? (7)
8. How many flights depart for Auckland? (6)
9. How many international flights are departing during this time? (1)
10. Name the places that have more than one flight arriving? (Auckland, Invercargill, Wellington)
11. Name the places that have more than one flight departing? Auckland, Wellington, Dunedin)
12. How many different airlines have flights arriving? (2)

13. How many different airlines have flights departing? (3)
14. If you missed the first Auckland flight, how long after it is the next one? (1hr 20mins)
15. If you were to meet someone on the first flight in from Wellington and they were actually on the next one, what is the time difference? (1hr 25mins)
16. List all the different messages shown in the right column of the two boards (Landed, delayed, cancelled, departing, go to checkin). What other messages might be shown? (Boarding, go to gate)
17. How many flights arrived on time? (none)
18. What is the most common amount of time between *Shed* (scheduled departure) and *Brd* (boarding time)? (15 minutes)
19. Extra questions for discussion:
  - Why are words shown in all-caps when that could be harder to read than mixed-case? (Maybe all-caps better for info in a table that is not sentences)
  - How is colour used on the boards? (icons, messages, inverse for urgent messages like Landed)
  - Look at the flight codes. What patterns can you see? (answers will vary)
  - Why are times shown in military format? (Maybe fewer mistakes as don't have to put am or pm. Takes up less space and is always 4 digits, world-wide consistency amongst airport systems)
  - Look at the gate numbers. What patterns can you see and speculate why that might be? (Maybe flights to and from big cities have high gate numbers in the 20s because they have air bridges and parking for bigger planes).
  - If you had the job of redesigning the boards, what changes would you suggest, if any. (answers will vary)
  - Why might mathematicians analyse some of the data shown over a days/weeks/months/years? (how many flights on time, if late, how late on average? Is there a difference between punctuality of arrivals and departures?)
  - What suggestions do you have for using technology to improve the user's experience regarding arrivals and departures? (answers will vary)