



Student worksheet 1

1. The table below provides the percentage of children immunised by their second birthday against measles, mumps and rubella (MMR) between 1996 and 2014 (England only). This data is from the Health & Social Care Information Centre (available from <http://www.hscic.gov.uk/catalogue/PUB14949/nhs-immu-stat-eng-2013-14-rep.pdf>).

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Year of 2 nd birthday	MMR 1 st dose (%)
1996-97	91.5
1997-98	90.8
1998-99	88.3
1999-2000	87.6
2000-01	87.4
2001-02	84.1
2002-03	81.8
2003-04	79.9
2004-05	80.9
2005-06	84.1
2006-07	85.2
2007-08	84.6
2008-09	84.9
2009-10	88.2
2010-11	89.1
2011-12	91.2
2012-13	92.3
2013-14	92.7





The table below provides numbers of confirmed cases of measles in England by age, between 1997 and 2013. This data is from Public Health England.

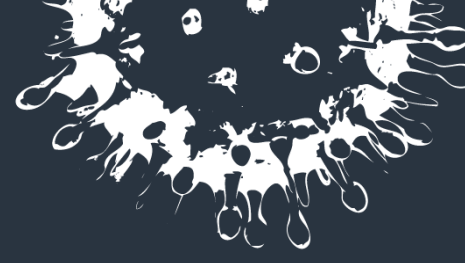
Year	< 1 year	1 – 9 years	10 – 19 years	20 + years	Not known	Total cases
1997	4	101	46	22	4	177
1998	2	26	12	16	0	56
1999	6	35	11	38	2	92
2000	11	52	14	23	0	100
2001	5	26	13	26	0	70
2002	33	171	58	43	3	308
2003	34	264	71	64	5	438
2004	24	108	25	31	3	191
2005	7	47	6	17	0	77
2006	76	389	129	144	2	740
2007	91	558	210	131	0	990
2008	112	649	380	229	0	1370
2009	84	603	331	125	1	1144
2010	33	128	112	107	0	380
2011	57	358	401	271	0	1087
2012	215	743	674	398	0	2030
2013	163	548	769	363	0	1843
2014	17	41	16	47	0	121

2. Using the data provided, plot a single graph showing MMR vaccination uptake and measles cases in England between 1997 and 2014. Plot the MMR vaccination uptake as a bar graph and the number of measles cases overtop as a line graph.

3a. Interpret your graph showing MMR vaccine uptake and measles cases in England. What has happened?

3b. Why do you think there were changes in the vaccination uptake rates and cases of measles? What influenced the changes?





4. What is the relationship between these two figures? How do they impact each other?

5. What were the ages of individuals who had measles in 2002? Explain why that may be?

6. Divide the measles cases data into three periods: 1997-2002, 2003-2008 and 2009-2014. What trend do you notice in the overall numbers and individual age groups?

7. What conclusions can you draw from the ages of the confirmed cases of measles?

8. How was herd immunity affected by the media in this example?

