

# STUDENT SHEET 3a

## Ocean acidification data and question sheet

Year	Annual Mean Ocean pH	Annual Mean Ocean CO <sub>2</sub> ppm
1989	8.110	269
1990	8.109	271
1991	8.109	270
1992	8.108	271
1993	8.101	277
1994	8.105	274
1995	8.102	275
1996	8.104	274
1997	8.095	282
1998	8.084	292
1999	8.083	293
2000	8.082	294
2001	8.084	292
2002	8.087	289
2003	8.095	283
2004	8.097	280
2005	8.088	288
2006	8.085	291
2007	8.079	295
2008	8.080	295
2009	8.073	303

*Data from the Hawaii Ocean Time-series*

### Answer all questions:

1. What is meant by the annual mean?
2. Use the above data to produce an appropriate graph of the trend in Ocean pH using Student Sheet 3b.
3. Draw a best-fit line through the points that shows the overall direction of the data.
4. Use the above data to produce an appropriate graph of the trend in Ocean Carbon Dioxide using Student Sheet 3c.
5. Draw a best-fit line through the points that shows the overall direction of the data.
6. Can you suggest a possible reason for any connection between the pattern shown by the two best-fit lines?
7. Data from the Catlin Arctic Survey will not be available for at least a year after the expedition. Can you think why this might be the case?