

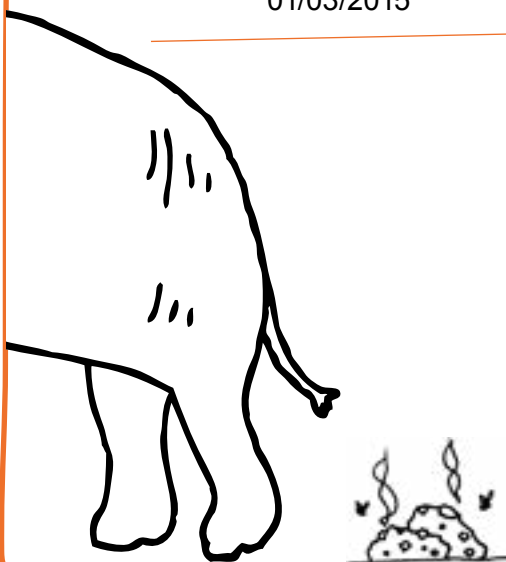
# LEARN AT CHESTERZOO

## MASSIVE ELEPHANT MATHS! Endocrinology

Our elephant keepers have done the smelly bit (collecting the poo samples!) and our endocrinology team have found out the amount of hormone in each sample.

Now we need to figure out what it all means! Plot the data in the tables to find out what the hormones can tell us about our elephants.

Date of sample	Hormone Concentration (ng/ml)	
	Elephant 1	Elephant 2
01/08/2014	22	18
01/09/2014	45	42
01/10/2014	35	40
01/11/2014	18	12
01/12/2014	25	35
01/01/2015	45	48
01/02/2015	48	62
01/03/2015	19	60



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## Different Data!

### Cycling

Month	Hormone level
August	22
September	45
October	35
November	18
December	25
January	45
February	48
March	19

### Becoming pregnant

Month	Hormone level
December	20
January	40
February	45
March	10
April	50
May	52
June	110
July	150

### Full pregnancy

Month	Hormone level
March	10
April	50
May	52
June	110
July	150
August	120
September	100
October	110

This elephant became pregnant in March so will be due to give birth in 22 months time.

Year	Month	Hormone level
2009	August	22
2009	September	45
2009	October	35
2009	November	18
2009	December	25
2010	January	55
2010	February	40
2010	March	20
2010	April	15
2010	May	40
2010	June	55
2010	July	35
2010	August	15
2010	September	20
2010	October	50
2010	November	35
2010	December	20
2011	January	40
2011	February	45
2011	March	10
2011	April	50
2011	May	52
2011	June	110
2011	July	150
2011	August	90

### Real data - every 3 weeks

Date	Hormone	Date	Hormone
05-Aug-09	21.0	12-Aug-10	28.8
26-Aug-09	20.2	02-Sep-10	17.9
16-Sep-09	18.5	23-Sep-10	84.4
07-Oct-09	36.0	14-Oct-10	64.0
28-Oct-09	17.3	04-Nov-10	17.7
18-Nov-09	6.0	25-Nov-10	15.5
09-Dec-09	8.8	16-Dec-10	14.2
30-Dec-09	57.6	06-Jan-11	40.3
20-Jan-10	15.2	27-Jan-11	29.1
10-Feb-10	23.6	17-Feb-11	10.5
03-Mar-10	7.0	10-Mar-11	5.2
24-Mar-10	16.8	31-Mar-11	37.7
14-Apr-10	19.1	21-Apr-11	54.1
05-May-10	14.4	12-May-11	63.8
26-May-10	9.7	02-Jun-11	104.6
16-Jun-10	32.5	23-Jun-11	126.0
07-Jul-10	44.5	14-Jul-11	146.1
28-Jul-10	36.3	4-Aug-11	99.0



Graph to show the level of hormone in poo samples from a female elephant at Chester Zoo

