

## How much have you Grown today ?

How much do we grow each  
**Year ?**  
**Month?**  
**Day ?**  
**Minute ?**



Let's use the CensusAtSchool pilot data to help us find out.

School Year	3	4	5	6	7	8	9	10	11
Mean Height (cm)	130.13	136	140.87	147.36	154.05	159.30	164.19	167.24	170.31

From Year 3 to Year 4 there is an increase of  $136 - 130.13 = 5.87\text{cm}$

So growth is: **5.87 cm per year**

Work out these rates for other years.  
 Are they all roughly the same ?  
 If not why ?

This works out at:

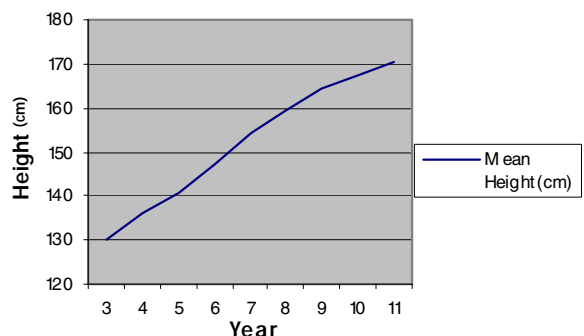
**0.489 cm per month**

**0.0161 cm per day**

**0.00001116 cm or  $1.116 \times 10^{-5}$  cm per minute**

Let's draw some graphs of age against height.  
 Try a Line graph with the data given in the table above to give you a rough idea.

To be more accurate and investigate more into growth use the individual data given in the Growth Datasheet on the CensusAtSchool website <http://www.censusatschool.ntu.ac.uk> (or use the information on the attached data sheet).



Can you think of other factors apart from age which will affect growth ?  
 How could you go about investigating them ?

## Growth Data Sheet

Year	Height (cm)	Date of Birth	Year	Height (cm)	Date of Birth	Year	Height (cm)	Date of Birth
8	170	06-Nov-86	3	126	18-Jun-92	4	122	12-Jun-91
8	160	26-Nov-86	3	125	02-Jan-92	4	138	25-Nov-90
8	155	02-Jan-87	3	123	29-Aug-92	4	135	20-Apr-91
9	160	27-Jun-86	5	134	10-Jul-90	5	155	02-Jan-90
9	162	31-Dec-85	4	105	20-Sep-90	5	136	12-Feb-90
9	163	09-Oct-85	3	125	26-Feb-92	5	148	08-Mar-90
9	175	05-Dec-85	6	142	19-Jul-89	5	136	26-Aug-90
9	160	17-Aug-86	4	129	31-Mar-91	11	162	11-Feb-84
9	170	06-Aug-86	4	125	18-Jul-91	11	160	11-Aug-84
10	184	03-Oct-84	3	135	04-Mar-92	9	160	16-Apr-86
10	180	10-Nov-84	3	140	15-Jan-92	9	175	17-May-86
10	183	22-Oct-84	3	135	20-Apr-92	9	173	04-Mar-86
11	167	01-Jul-84	3	122	10-Mar-92	9	172	08-Apr-86
11	187	06-Sep-83	3	133	03-Sep-91	9	170	27-Feb-86
11	185	25-Sep-83	3	130	30-Aug-92	9	170	18-Aug-86
8	164	02-Jun-87	10	171	27-Jan-85	9	156	14-Apr-86
8	172	07-Nov-86	10	184	19-Sep-84	9	169	12-Jul-86
8	172	19-Mar-87	10	163	09-Jul-85	9	178	03-Dec-85
8	173	22-Apr-87	10	179	25-Feb-85	9	168	08-Jun-86
8	161	11-Mar-87	10	198	25-Jan-85	9	162	21-May-86
8	159	08-Oct-86	10	176	28-Oct-84	9	180	27-Sep-85
8	177	16-Oct-86	6	140	16-Dec-88	7	158	05-Dec-87
8	161	14-Mar-87	5	131	14-Sep-89	7	152	05-Apr-88
8	160	15-Jan-87	5	141	28-Jun-90	8	165	24-Oct-86
7	137	15-Jun-88	5	130	06-Apr-90	8	170	23-Oct-86
7	142	05-Aug-88	5	140	19-Feb-90	8	170	02-Mar-87
7	139	20-Apr-88	5	137	10-Sep-89	10	173	07-Feb-85
7	145	15-May-88	5	135	21-Sep-89	10	179	26-Jul-85
7	146	18-Aug-88	5	141	04-Apr-90	10	157	24-Mar-85
7	155	01-Jul-87	5	144	10-Jan-90	10	166	02-Apr-85
11	180	02-Sep-84	6	153	05-Jun-89	6	146	03-Jul-89
11	175	21-Sep-83	6	144	10-Mar-89	6	140	03-Apr-89
7	145	06-Aug-88	6	149	19-Mar-89	6	140	15-Feb-89
7	150	15-Apr-88	6	160	20-Mar-89	6	145	07-Jan-89
7	147	18-Aug-88	6	146	27-Nov-88	6	150	18-Jan-89
7	160	24-May-88	6	145	05-Jun-89	4	127	19-May-91
7	152	01-Mar-88	6	140	25-Dec-88	4	130	07-Jan-91
4	138	15-Dec-90	4	134	13-May-91	4	134	14-Jun-91
4	131	20-Nov-90	5	136	27-Jul-90	4	133	07-Apr-91
6	129	18-Aug-89	6	146	11-Jun-89	7	154	04-Jun-88