



House prices change over time, but do so at different rates in different places.

In this activity you will use statistical diagrams and measures to compare house prices and the way they have changed in different parts of Britain in recent years.



## Information sheet A Data

Data set 1		
Monthly average house prices UK 2010		
Month	First-time buyers	All houses
Jan	123,310	165,514
Feb	126,336	165,997
Mar	123,715	167,808
Apr	127,808	170,772
May	125,865	169,204
Jun	123,717	166,395
Jul	125,074	168,331
Aug	126,906	168,889
Sep	123,482	163,639
Oct	124,971	165,275
Nov	121,376	163,268
Dec	119,960	161,498

Data set 2				
Average house prices UK 1983–2010				
Year	N. Ireland	Scotland	Wales	UK
1983	25,715	28,927	25,878	30,898
1984	27,755	31,545	27,034	33,117
1985	29,350	33,523	28,738	36,145
1986	31,230	34,672	30,625	40,126
1987	31,255	36,666	33,741	46,315
1988	32,578	40,410	42,001	57,087
1989	33,596	47,737	55,766	68,946
1990	33,975	52,686	56,827	68,950
1991	37,776	55,785	56,188	68,130
1992	37,416	55,883	53,758	64,309
1993	39,009	56,801	52,908	62,455
1994	41,692	57,681	52,255	62,750
1995	44,444	57,684	50,250	61,666
1996	52,577	59,272	53,192	64,441
1997	54,153	59,212	54,868	68,504
1998	60,574	60,681	56,971	72,196
1999	63,978	61,546	60,114	77,405
2000	67,996	61,964	63,407	85,005
2001	76,322	63,628	68,267	92,256
2002	79,050	68,988	77,576	108,342
2003	87,507	79,401	102,796	132,589
2004	102,327	95,637	133,610	156,831
2005	124,965	108,671	143,298	165,807
2006	165,716	121,974	152,606	179,601
2007	217,180	141,229	165,810	196,478
2008	174,658	138,312	149,935	181,032
2009	144,968	123,398	132,501	162,085
2010	130,183	121,910	137,233	166,739



Data set 3 Average house prices in regions of the UK 1983–2010

Year	East Anglia	East Midlands	London	North West	North	South East	South West	West Midlands	Yorks & Humb
1983	30,086	26,138	39,818	25,578	25,232	40,590	33,064	28,223	23,090
1984	32,612	27,941	44,446	26,580	26,432	44,532	35,151	29,319	24,491
1985	36,476	30,476	52,253	28,165	27,659	50,302	38,904	30,957	25,856
1986	41,796	33,133	63,562	30,415	28,890	58,578	43,505	33,704	27,624
1987	52,370	37,958	79,878	32,717	30,779	73,475	52,281	38,638	30,130
1988	74,889	48,886	97,683	38,119	34,492	94,337	71,959	52,427	35,791
1989	76,855	63,564	99,976	51,667	46,119	99,148	80,234	67,930	51,414
1990	67,919	61,271	94,204	58,175	52,408	91,134	73,332	67,160	54,832
1991	64,509	59,571	88,737	60,451	53,866	85,569	69,557	67,840	55,513
1992	59,725	56,034	80,430	57,828	53,001	78,257	64,106	64,735	53,541
1993	58,132	54,451	76,459	56,104	52,063	75,653	61,472	61,850	52,706
1994	58,906	54,653	77,863	55,205	51,382	77,027	62,367	61,618	52,253
1995	58,229	53,293	77,590	53,147	49,419	77,248	61,548	60,853	50,617
1996	59,473	54,727	84,554	53,892	50,936	81,120	64,499	63,387	51,828
1997	63,472	57,887	98,075	55,433	52,113	89,793	69,335	66,960	52,764
1998	67,512	60,086	108,407	56,378	53,300	99,114	74,848	70,568	53,051
1999	72,549	63,995	126,584	59,079	55,536	110,061	82,278	71,883	54,600
2000	84,135	69,258	148,753	62,051	55,998	129,191	96,226	79,647	56,322
2001	97,071	75,085	170,551	65,396	59,054	143,960	108,392	85,084	59,452
2002	116,133	94,551	198,834	74,891	68,485	167,916	133,367	102,656	68,736
2003	139,911	119,578	224,305	93,705	93,508	196,384	157,957	130,015	91,345
2004	157,134	141,510	242,296	120,941	123,704	214,638	180,340	152,552	114,299
2005	161,269	147,654	247,419	133,949	134,555	217,963	182,709	159,568	126,824
2006	174,816	156,676	271,127	144,540	143,148	231,847	194,244	170,130	139,099
2007	191,743	165,302	309,618	152,660	151,846	258,514	212,234	180,753	147,894
2008	180,746	152,118	280,833	142,793	138,067	238,923	192,825	167,055	133,920
2009	156,512	135,459	247,648	126,061	126,212	215,968	178,552	150,728	121,532
2010	162,737	141,580	262,741	124,483	129,069	227,857	187,965	155,095	124,274



### Information sheet B Statistical measures

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An average is a representative value for a set of data. There are three different types of average. The choice of which to use depends on the data and the reasons for carrying out the survey.

**Mode:** the value which occurs the most often.

Sometimes there isn't a mode. Sometimes there are two or more modes.

**Median:** the middle value in an ordered list of the data.

If there are two middle values, use the value half-way between them.

**Mean:** the sum of the values divided by the number of values.

#### Think about...

Which do you think is the best average to use for a set of house prices? Why?

**Range** is the difference between the highest value and the lowest value.

#### Think about...

What does the range measure?

### Information sheet C Statistical diagrams

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Here is a list of charts and graphs that could be used to illustrate data:

**pictogram**    **bar chart**    **pie chart**    **line graph**

#### Think about ...

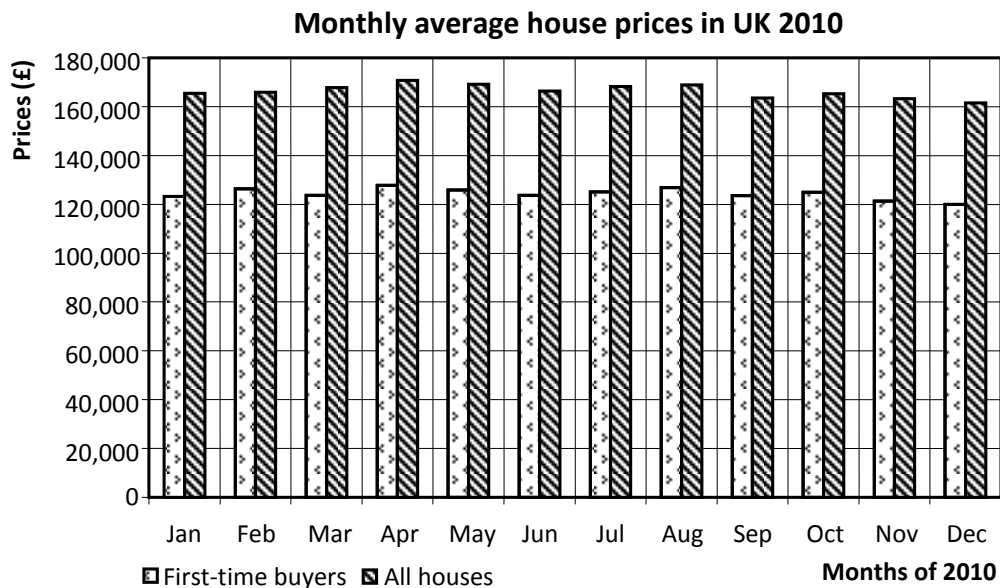
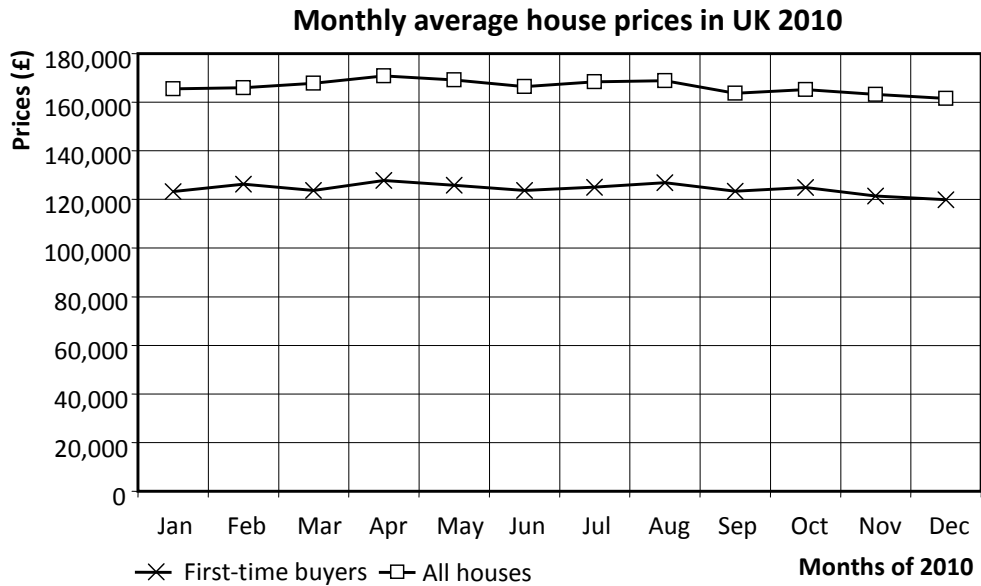
Which types of chart or graph could you use to illustrate the data given in information sheet A?

Which do you think would be best? Why?

Try these ...

For questions 1 and 2 use Data set 1 'Monthly average house prices UK 2010'

1 Two ways of representing the data are given below:



a Which of these statistical diagrams do you think is better? Why?

bi Describe any similarities between the data for first-time buyers and the data for all houses.

ii Describe any differences.

**2a** Copy and complete the table below.

	<b>First-time buyers</b>	<b>All houses</b>
Range		
Median		
Mean		

- b** Explain what the range values tell you about the data.
- c** Do you think the mean or the median is a better representative value? Why?

**For questions 3 and 4 use Data set 2 'Average house prices UK 1983–2010'**

**3a** On the same axes, draw line graphs to show the data for Scotland and the data for Northern Ireland.

*Hint:* To work out a scale for the house prices, look for the largest house price then decide the value for each square.

- b** Describe any patterns you notice.

**4a** Copy and complete the table below.

	<b>Scotland</b>	<b>Northern Ireland</b>
Range		
Mean		
Median		

- b** Comment on what these values tell you about the prices for houses in these countries from 1983 to 2010.

**For questions 5 and 6 use**

**Data set 3 'Average house prices in regions of the UK 1983–2010'**

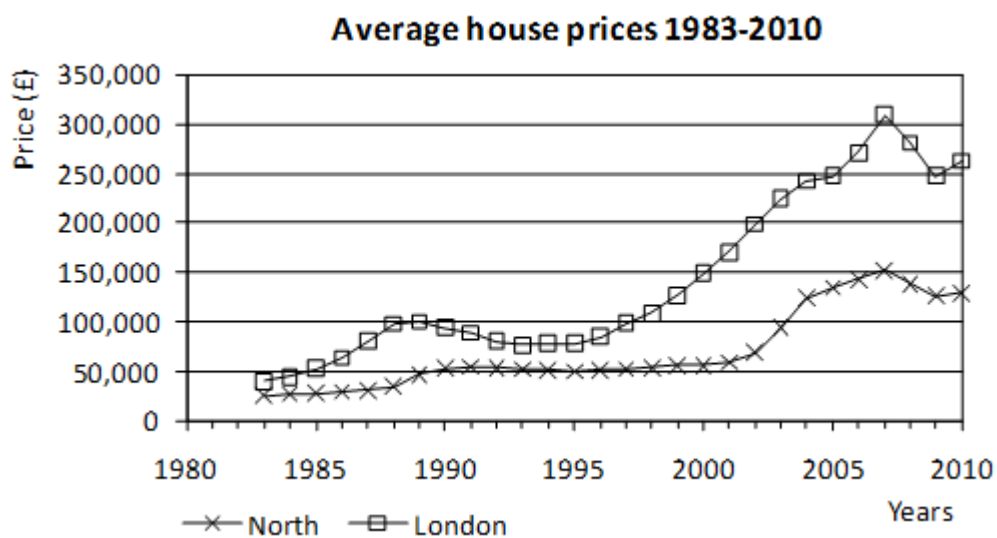
- 5a i** What were the 3 cheapest regions in 1983?
- ii** Were these still the cheapest regions in 2010?
- bi** Which were the 3 most expensive regions in 1983?
- ii** Were these still the 3 most expensive in 2010?
- c** Suggest reasons for your answers to parts **a** and **b**.

6a Copy and complete the table below:

	1983	2010
Range		
Median		
Mean		

b Describe what these measures tell you about the data.

7 This is a line graph showing house price data for London and the North of England.



a What happened to London house prices in 1989?

b i What happened to house prices in the North of England between 1990 and 2000?

ii What happened to London prices over the same period?

c i In what year was the average house price in both regions highest?

ii Write down the maximum average house value for London.

iii Write down the maximum average house value for the North of England.

### At the end of the activity

Which of these diagrams could you use to represent several large datasets which cover a period of time: **pictogram, bar chart, pie chart, line graph**? What are the advantages and disadvantages of each type of diagram?

How do you find the range? What does it measure?

How do you find the mode, the mean and the median?

What are their advantages and disadvantages?