MEDIAN

BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

KEY IDEA

The median is the middle value.

1. Put the numbers in order, smallest first.
2. Find the one in the middle.



1 Put the cards in order. Circle the middle card. Write the median.

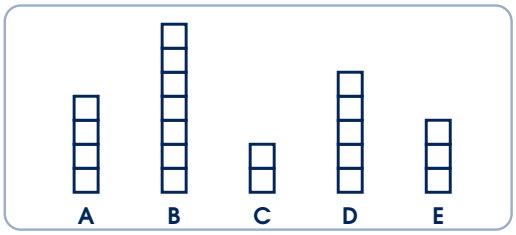
8	2	6	3	9

In order: ☐ ☐ ☐ ☐ ☐

smallest largest

Median = ☐

2 Here are five towers of cubes.



a) Write the heights in order.

☐ ☐ ☐ ☐ ☐

b) The median height is ☐ cubes

3 What number is halfway between the two numbers? Write it in the box.

a) 4 ☐ 6

b) 10 ☐ 20

c) 7 ☐ 8

4 Here are six cards in order. There are two middle cards.

1	3	4	6	8	9

a) Circle the two middle cards.

b) Find the number halfway between them. Median = ☐

MEDIAN

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

The median is the middle value of an ordered list.

Odd number of values: the middle one.

Even number of values: halfway between the two middle ones.

3 5 7 → 5

2 4 6 8 → 5

1 There is an odd number of values. Write each list in order, then find the median.

a) **7, 3, 9, 4, 6**

In order: ☐ ☐ ☐ ☐ ☐ **Median =** ☐

b) **15, 11, 18, 12, 20, 14, 16**

In order: ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Median =** ☐

2 There is an even number of values. Find the median.

a) **2, 9, 5, 7** In order: _____ **Median =** ☐

b) **12, 8, 10, 3, 11, 6** In order: _____ **Median =** ☐

c) **5, 4, 10, 1** In order: _____ **Median =** ☐

3 Ella finds the median of these cards.

8 2 7 1 5 **"The median is 7 because 7 is in the middle."**

a) Explain Ella's mistake. _____

b) What is the correct median? ☐

4 Find the median. Remember to write the units.

a) Plant heights: 14 cm, 9 cm, 21 cm, 17 cm, 12 cm ☐

b) Prices: £3, £8, £5, £6 ☐

MEDIAN

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

Order the data first. With n values in order, the median is the value in position (n + 1) ÷ 2. If n is even, it lies halfway between the two middle values, so it may not be in the data set.

FLUENCY

1 Find the median of each set of data.

a) **23, 31, 18, 27, 25** Median: ☐

b) **4.2, 3.8, 5.1, 4.6** Median: ☐

c) **£12, £9, £15, £9, £20, £11** Median: ☐

d) **60, 45, 72, 38, 51, 45, 66** Median: ☐

2 Eight runners' times, in seconds, are shown.

12.4, 13.1, 11.8, 12.9, 13.5, 12.0, 12.6, 14.2

a) Find the median time. ☐

b) The slowest runner is disqualified. Find the new median time. ☐

REASONING

3 Write

a) five different numbers with a median of 8

.....

b) four numbers with a median of 8, where 8 is not in the list

.....

4 Every number in the list 6, 11, 4, 9, 15 is increased by 5. Ali says, "The median will also increase by 5." Do you agree? Explain your answer.

.....

.....

MEDIAN

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

If it is sometimes true, give an example of when it is true and when it is not.

a) The median is one of the numbers in the list. ALWAYS SOMETIMES NEVER

b) The median of an even number of whole numbers is a whole number. ALWAYS SOMETIMES NEVER

c) A list and the same list written in reverse have the same median. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 Five whole-number cards fit all of these facts. Find the five cards.

median = 7 **mode = 4** **largest = 12** **mean = 7.2**

3 The median score of nine pupils in a test is 15.

a) Two more pupils score 4 and 26. What is the new median? Explain.

b) Instead, two more pupils score 20 and 25. Can you be sure of the new median? Explain.

★ CHALLENGE FOR ALL

4 Six whole numbers have a median of 6.5 and a mean of 7. The only mode is 3 and the largest number is 12. Find two possible sets of numbers.

a) Set A

b) Set B

MEDIAN – ANSWERS

ANSWERS

BUILDING BLOCKS

1. 2, 3, 6, 8, 9; median = 6
2. a) 2, 3, 4, 5, 7 · b) 4 cubes
3. a) 5 · b) 15 · c) 7.5
4. a) 4 and 6 · b) 5

SUPPORT

1. a) 3, 4, 6, 7, 9; median = 6 · b) 11, 12, 14, 15, 16, 18, 20; median = 15
2. a) 2, 5, 7, 9; median = 6 · b) 3, 6, 8, 10, 11, 12; median = 9 · c) 1, 4, 5, 10; median = 4.5
3. a) She did not put the numbers in order first. · b) 1, 2, 5, 7, 8; median = 5
4. a) 14 cm · b) £5.50

CORE

1. a) 25 · b) 4.4 · c) £11.50 · d) 51
2. a) 11.8, 12.0, 12.4, 12.6, 12.9, 13.1, 13.5, 14.2; median = 12.75 s · b) 12.6 s
3. e.g. a) 2, 5, 8, 10, 11 · b) 6, 7, 9, 10 (the two middle values must total 16)
4. Agree. In order 4, 6, 9, 11, 15 has median 9; the new list 9, 11, 14, 16, 20 has median 14. Adding the same amount keeps the order, so the middle value also goes up by 5.

GREATER DEPTH

1. a) sometimes (1, 2, 3 has median 2; 1, 2, 3, 4 has median 2.5) · b) sometimes (1, 3 → 2; 1, 2 → 1.5) · c) always
2. 4, 4, 7, 9, 12 (total = 5 × 7.2 = 36, so the fourth card is 36 – 27 = 9)
3. a) 15: one score is added below and one above, so the middle value does not change. · b) No: the new median is the 6th of 11 scores, which depends on the score just above 15 (it is 15 or more, but could be anything up to 20).
4. e.g. 3, 3, 3, 10, 11, 12 and 3, 3, 4, 9, 11, 12 (also 3, 3, 5, 8, 11, 12 or 3, 3, 6, 7, 11, 12)