Odd and even numbers – find out more

Name ___________________________      Date ___________________

Odd and even numbers - find out more

**Even numbers** are whole numbers that you can **evenly share** between two groups. Another word for share is **divide**.

You can share 6 cupcakes evenly between two plates. **6 is an even number.**

You can divide 10 pencils evenly between two pencil cases. **10 is an even number.**

**The last digit of an even number is always 0 2 4 6 or 8**

**Odd numbers** are whole numbers that you **cannot** evenly share between two groups. Whole numbers are either odd or even.

You cannot divide 9 biscuits evenly between two plates. **9 is an odd number.**

You cannot share 13 whole sweets evenly between two children. **13 is an odd number.**

**The last digit of an odd number is always 1 3 5 7 or 9**
Odd and even numbers – find out more

Check you understand even numbers

Finish the pictures.

You can share 8 sweets evenly between two children.

You can divide 14 seeds evenly between two flowerpots.

Circle all the even numbers.

13 14 6 7 30 32 28 14 4 1 45 29

Check you understand odd numbers

Finish the pictures.

You cannot share 7 pencils evenly between two pencil cases.

You cannot split 11 seeds evenly between two flowerpots.

Circle all the odd numbers.

3 4 16 7 50 43 12 17 9 11 25 28
Odd and even numbers – real life problems

For full marks, you must show how you get your answer.

Name ___________________________      Date ________________

Activity holiday

1. Pasha books a chalet at Active Parks.
   Here are the chalet numbers in Woodside Way.
   12 13 14 15 16 17 18 19 20 21 22

   How many chalets have even numbers? ________________

2. Margo stays at the Active Parks hotel.
   Margo wants a room with a shower and a forest view.
   Rooms with even numbers have a park view.
   All the other rooms have a forest view.

   | 32 shower | 33 bath |
   | 34 bath   | 35 bath |
   | 36 bath   | 37 shower |
   | 38 shower | 39 bath  |
   | 40 shower | 41 shower |

   Tick all the rooms that Margo can book.

3. Pasha joins the ‘Heroes’ team at Active Parks.
   Team members wear shirts with odd numbers.
   Circle all the odd numbers below.

   12 13 14 15 16 17 18 19 20 21 22
Odd and even numbers – real life problems
For full marks, you must show how you get your answer.
Name ___________________________ Date ____________

Delivery services

1. Violet is a courier. She delivers a parcel to a house in River Road.
   Some house numbers are missing from her map.
   Write in the missing numbers.

   | 131 |
   |     |
   | 135 |
   | 137 |
   | 139 |
   |     |
   | 134 |
   | 136 |
   | 138 |
   River Road

2. Violet has a parcel for 60 Seabrook Street.
   She finds a parking space outside 46 Seabrook Street.
   The house numbers go up in even numbers on this side of the street.
   Complete the numbers until you get to number 60.
   46 48 ___________________________ (3)

3. After work, Violet goes to the cinema. She wants a deluxe seat.
   All the seats with odd numbers between 49 and 199 are deluxe seats.
   These are all the available seats:
   13 14 55 37 56 219 191 70 77 133

   How many seats are suitable for Violet? ________________ (3)
Number patterns – find out more

These numbers are arranged in a pattern.

4 4 4 7 7 4 4 4 7 7 4 4 4

The pattern repeats like this: three 4s, two 7s, three 4s, two 7s, three 4s, and so on.

Number patterns – check you understand

Describe how this pattern repeats: 8 8 8 6 8 8 6 8 8 6

Write the next two numbers for each pattern.

4 4 7 7 4 4 7 7 4 4 __ __

2 2 3 2 2 3 2 2 3 2 __ __

5 1 6 6 5 1 6 6 5 1 6 __ __

Write the next three numbers for each pattern.

0 0 7 7 8 0 0 7 7 8 0 0 7 __ __ __

9 7 5 9 7 5 9 7 5 9 7 5 9 __ __ __

Write the missing numbers.

2 2 __ 9 2 2 2 9 2 2 2 9 __

0 0 7 2 2 __ 0 7 2 2 0 0 7 2 2 __
Pet shop

1. Sofia works in pet shop that opens 7 days a week.
   Her working days follow a pattern. She works 4 days, has 1 day off, then works another 4 days, has 1 day off, and so on.

<table>
<thead>
<tr>
<th>MARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>21</td>
</tr>
<tr>
<td>28</td>
</tr>
</tbody>
</table>

   Thursday 3rd March is her first day off in March.

   How many days off does Sofia have in March? ____________  

2. Sofia feeds the tropical fish with food tablets. She uses this plan.

   Complete the table.

   How many tablets does Sofia use in 10 days? ____________
Here is a list of even numbers. This is called a number sequence. Numbers in a sequence always follow a rule. The rule for this sequence is **add on two**.

![Number sequence with rule: +2](image)

Here is a different number sequence. The rule is **add on three**.

![Number sequence with rule: +3](image)

Here is a sequence where the numbers get smaller. The rule is **take away four**. Can you work out the next number in the sequence?

![Number sequence with rule: -4](image)

**Number sequences – check you understand**

Write the rule for each sequence. Then write the next 3 numbers for each sequence.

1. 11 12 13 14 15 16 17 ___ ___ ___

2. 22 20 18 16 14 12 10 ___ ___ ___

3. 25 30 35 40 45 50 55 ___ ___ ___
Number sequences – real life problems
For full marks, you must show how you get your answer.

Name ___________________________ Date __________________

Village fete

1. Entrance tickets to the village fete cost £1. Every ticket has a number.
   Tickets with a lucky number win a prize. The lucky numbers follow this pattern.
   9 19 29 39 49
   Write the rule for working out the next number.
   ____________________________________________________________ (1)

   What are the next two lucky numbers? __________________________ (1)

2. 200 raffle tickets are used for the tombola game. The numbers go from 1 to 200.
   If you pull out a number ending in a zero you win a prize.
   How many tombola prizes are there? ____________________________ (1)
   Show your working out. (2)

3. 36 people want to play Tug of War. Each person is given a number from 1 to 36.
   The people are split into 4 teams using a number pattern.

<table>
<thead>
<tr>
<th>Team</th>
<th>Number pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1, 5, 9, 13,</td>
</tr>
<tr>
<td>B</td>
<td>2, 6, 10, 14,</td>
</tr>
<tr>
<td>C</td>
<td>3, 7, 11, 15,</td>
</tr>
<tr>
<td>D</td>
<td>4, 8, 12, 16,</td>
</tr>
</tbody>
</table>

   Write the numbers from 17 to 36 in the table using the same pattern. (3)
   What team will person number 31 be in? ________________________ (1)
   How many people are in each team? ____________________________________ (1)
Number sequences – real life problems
For full marks, you must show how you get your answer.
Name ___________________________ Date ________________

Cinema

1. Simon works at the cinema shop. Pasha buys popcorn for £1.65.
   Simon gives Pasha change from a £2 coin. He gives the change using only 5p coins.
   
   **Show how Simon counts up in 5s from £1.65 to £2.**
   
   £1.65, £1.70, ___________________________________________ £2.00 (2)

   **How many 5p coins does Simon give to Pasha? ________________** (1)

2. In Screen D the number of seats in each row follows a pattern.

<table>
<thead>
<tr>
<th>Row</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of seats</td>
<td>7</td>
<td>11</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   **Write the rule for the pattern: _______________________________________** (1)

   **Complete the table above for rows 4 to 6. (2) Show your working out below. (1)**

3. Simon checks the money in the shop till at regular intervals.
   These are the times when he checks.

   __________  13:00  16:00  19:00  __________

   **Write the rule for the pattern**

   _______________________________________ (1)

   **Fill in the missing times. (2) Show your working out below. (2)**
Graham’s garden

1. Graham plants some red pepper seeds.

The calendar show when he waters them. He follows a pattern.

<table>
<thead>
<tr>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>22</td>
</tr>
<tr>
<td>29</td>
</tr>
</tbody>
</table>

How often does Graham water the peppers? _______________ (1)

How many more days will he water them in May? _______________ (2)

2. Graham fills the bird feeders in his garden every 8 days.

In May he fills them on the 3rd, 11th and 19th.

What is the next date that he fills them? (1)

Show your working out. (1)

3. Graham is saving for a new greenhouse. The greenhouse costs £429.

Graham saves the same amount each month. Complete the table below. (1)

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Saved £</td>
<td>40</td>
<td>80</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Will Graham have enough money by October? _______________ (1)

Draw a table to show how you worked out your answer. (1)
Number sequences – real life problems
For full marks, you must show how you get your answer.
Name ___________________________ Date ___________________
Fitness watch

1. John has a new fitness watch for his 70th birthday. It measures his heart rate. He wants to achieve the maximum heart rate suggested for his age. He sees this table on the internet.

<table>
<thead>
<tr>
<th>Age</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. heart rate (beats per minute)</td>
<td>200</td>
<td>190</td>
<td>180</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Write the rule for the pattern: ____________________________________ (1)
Complete the table for ages 60 to 80. __________________________ (1)
What heart rate should John be aiming for? __________ bpm. (1)

2. John’s fitness watch also measures the number of step he takes each day. He wants to increase his steps until he achieves 8000 a day. He makes a plan.

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steps per day</td>
<td>5000</td>
<td>5500</td>
<td>6000</td>
<td>6500</td>
<td></td>
</tr>
</tbody>
</table>

Complete the plan above until John’s target number of steps is reached. (3)
In what week will John achieve his target? ________________ (1)

3. The gym coffee shop has a loyalty card. John has one coffee every time he visits the gym. In January, he gets a new loyalty card and visits the gym 24 times.

How many free coffees does John get in January?

Buy 6 cups get your 7th one free!
Check your knowledge – mixed problems
For full marks, you must show how you get your answer.

Name ___________________________ Date ___________________

1. Fishing for ducks is a popular game at the village fair.
   If you catch a duck, you win a prize. Each duck has a number.
   Odd numbers win a toy. Even numbers win sweets.
   Write the correct prize underneath each number in the table.

   | Number of duck | 6   | 17 | 15 | 12 | 21 |
   | Prize (toy or sweets) |     |    |    |    |    |

2. Nicoleta gets new tablets from the doctor. She must take the tablets for ten days.
   The doctor gives her this plan.

<table>
<thead>
<tr>
<th>Day</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of tablets</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Complete the plan. (1)
   How many tablets does Nicoleta take altogether? ________________ (1)
   Show your working out below. (2)

   Mary gives him change from a £1 coin. She gives the change using only 2p coins.
   Show how Mary counts up in 2s from £0.76 to £1.
   £0.76, £0.78, ___________________________________________ £1.00 (2)
   How many 2p coins does Mary give the customer? ________________ (1)
Check your knowledge – mixed problems
For full marks, you must show how you get your answer.
Name ___________________________ Date ___________________

4. Stan selects and packs online orders in a building supplies warehouse. The warehouse is organised into sections and shelves.

<table>
<thead>
<tr>
<th>Odd numbered shelves only</th>
<th>Even numbered shelves only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A: Shelves 1 to 7</td>
<td>Section D: Shelves 2 to 8</td>
</tr>
<tr>
<td>Section B: Shelves 9 to 19</td>
<td>Section E: Shelves 10 to 20</td>
</tr>
<tr>
<td>Section C: Shelves 21 to 27</td>
<td>Section F: Shelves 22 to 28</td>
</tr>
</tbody>
</table>

Stan lists some popular products and their shelf numbers. **Complete the list.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Shelf Number</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood screws</td>
<td>23</td>
<td>C</td>
</tr>
<tr>
<td>Bolts</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Washers</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Hinges</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

5. Billy is a drummer in a band. He uses this beat pattern.

2, 2, 2, 4, 4, 2, 2, 2, 4, 4, 2, 2, 2, 4

What are the **next two** beats in the pattern? ___________________________ (2)

6. Mary’s catches the bus to work. The bus times follow this pattern.

**Bus leaves at:**

- 6 minutes past the hour
- 18 minutes past the hour
- 30 minutes past the hour
- ____ minutes past the hour
- ____ minutes past the hour

Write the rule for the pattern: ___________________________ (1)

Fill in the missing bus times. (2)
7. Lucas is a nurse. He takes a patient’s temperature at regular intervals.

These are the times when he checks.

12:45  13:00  13:15  ___  ___  

Write the rule for the pattern.

__________________________________________________________   (1)

Fill in the missing times.

(1)

8. Lucas is buying mini cheeses for his children’s lunch boxes. He needs 15 cheeses.

The supermarket has a special offer.

Buy 4 mini cheeses get the 5th one free.

How many free cheeses will Lucas get? ________________  (2)

9. Millie plays the xylophone. She uses the numbers on the xylophone keys to help her play this repeating tune.

1 2 3 4 2 3 4 5 3 1 2 3 4 2 3 4 5 3 1 2 3 4 2 3 4 5 3

How many times does she repeat the tune? ________________   (1)

Millie learns this new tune:

8 7 8 7 6 5 4 8 7 8 7 6 5 4 8 7 ____________   (1)

Complete the pattern so she plays 21 beats altogether.