# SMILE WORKCARDS

## Properties of Number Pack One

### Contents

# Odd and Even

There are 9 socks on the washing line ...
4 pairs of socks ... and 1 single sock

○ ○ ○ ○ ○
○ ○ ○ ○
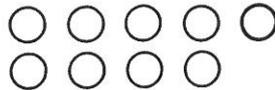
9 is an *odd* number.

6 shoes make 3 pairs of shoes.

○ ○ ○
○ ○ ○
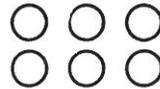
6 is an *even* number.

**(a)** Take 4 counters.
How many pairs can you make?

○ ○ ○ ○

Is 4 an odd number or an even number?

**(b)** Take 7 counters.
How many pairs can you make?

○ ○ ○ ○ ○ ○ ○
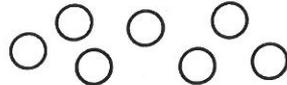
Is 7 an odd number or an even number?

Are these numbers *odd* or *even*?

| | | | |
|---|---|---|---|
| **(c)** | 11 | **(h)** | 18 |
| **(d)** | 23 | **(i)** | 25 |
| **(e)** | 10 | **(j)** | 14 |
| **(f)** | 5 | **(k)** | 3 |
| **(g)** | 17 | **(l)** | 1 |

# Even Animal

Join the **even** numbers 2 – 4 – 6 . . .

51  53
52  54  55
56
50  58  57
5  1
4  2 ← **Start**
6  3
7
8
9
49
48
10
11
12
47
45
13
43  15
14
46  35  25
17
37  16
44  42  36  26  19
38  24
33
41  18  20
39  32  34  28  22
40  30
27  21
31  29  23
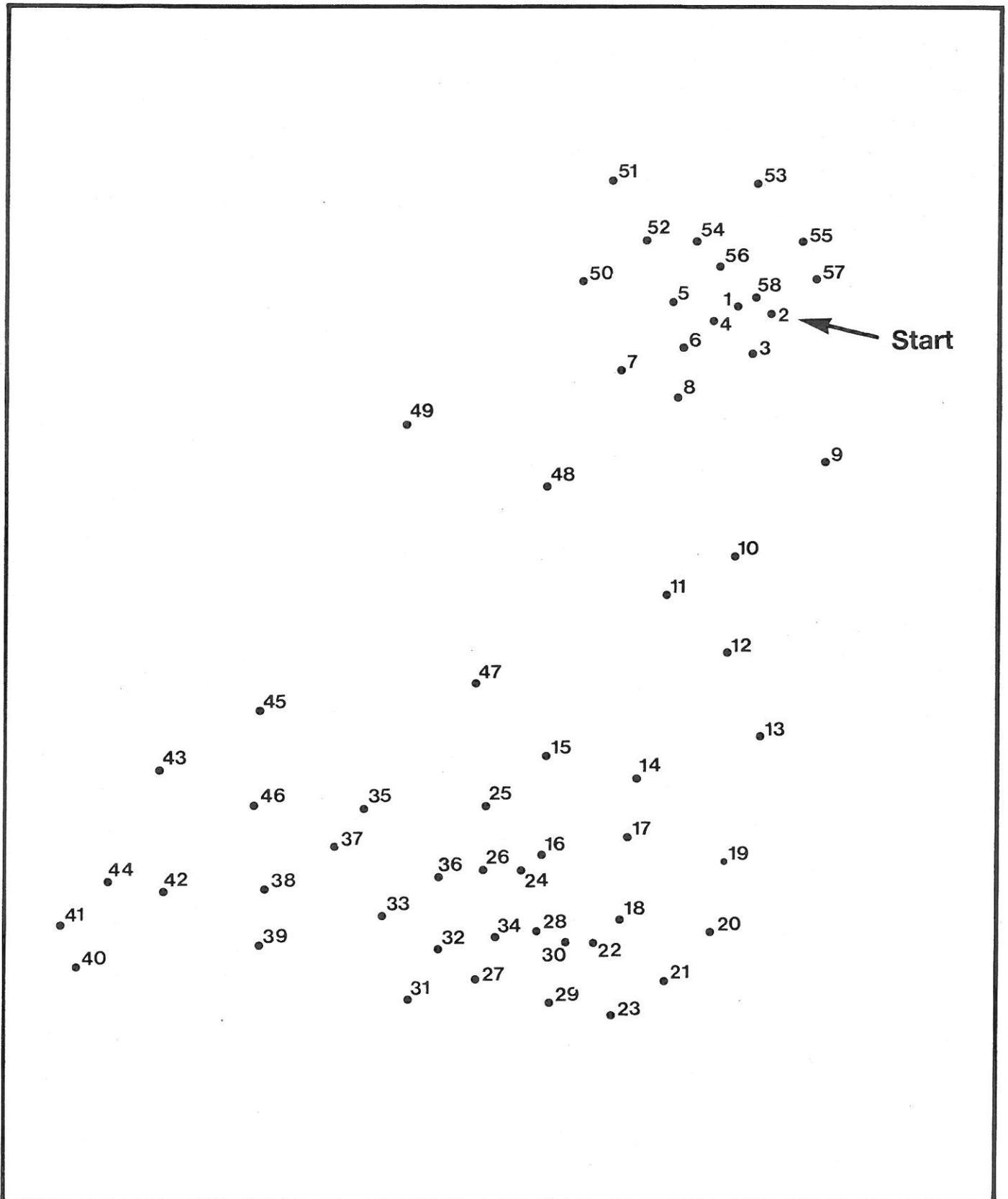
# ODD ANIMAL

Join all the *odd* numbers  **1 → 3 → 5 . . .**
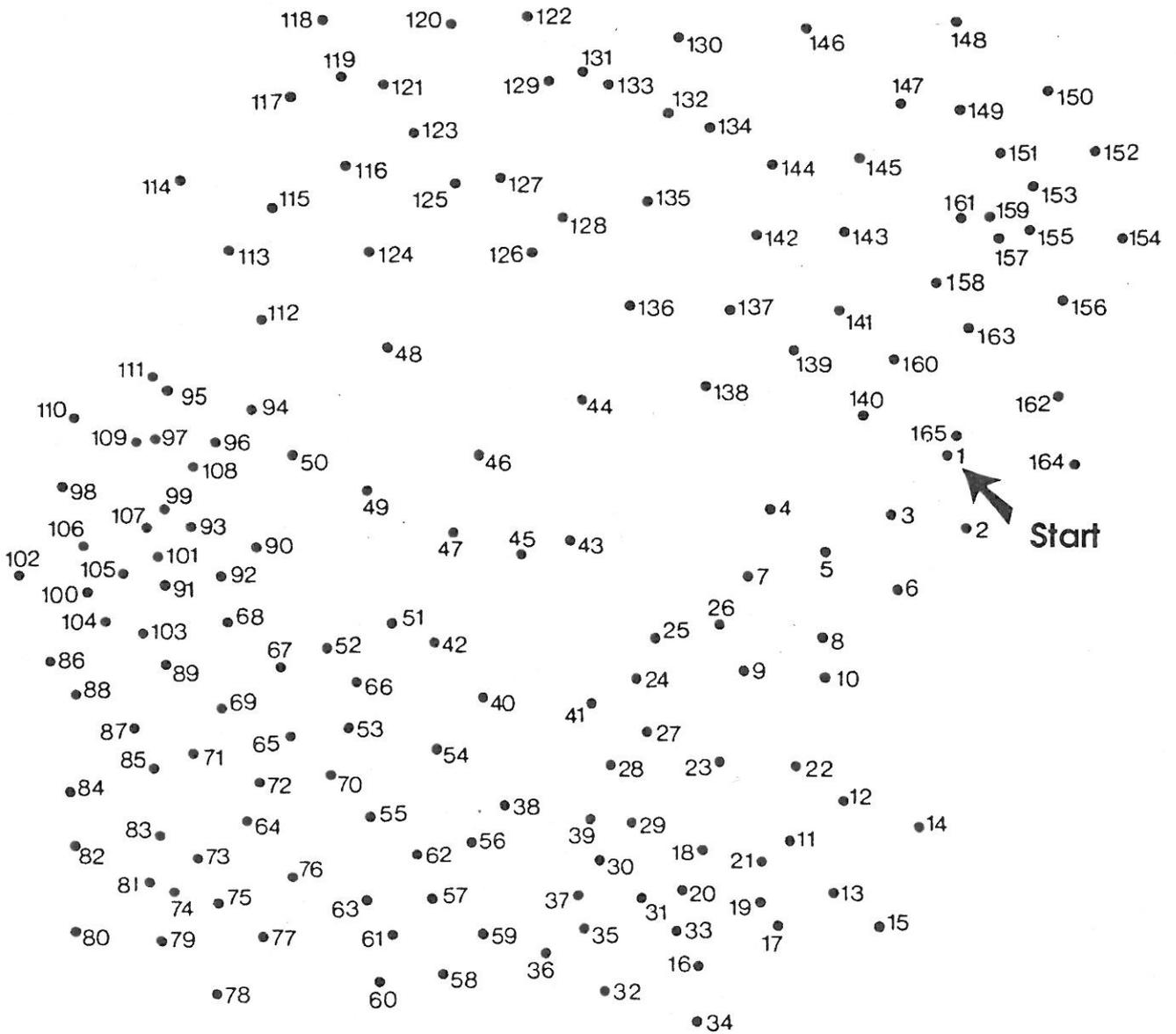
# Joining odds and evens

There are two pictures hidden in these dots.

To get the first picture, join the odd numbers (1 ——▶ 3 ——▶ 5). The last number is 131.

To get the second picture use a new colour and join the even numbers (2 ——▶ 4 ——▶ 6). The last number is 138.

# EVENS Worksheet

Smile 0868

## Two's

Continue the pictures

Fill in the numbers

| 1x2 | 2x2 | 3x2 | 4x2 | 5x2 |
|-----|-----|-----|-----|-----|
| 2 | 4 | | | |

## PAIRS
fill in the numbers

| 1 pair | 2 pairs | 3 pairs | 4 pairs | pairs | 6 pairs | pairs |
|--------|---------|---------|---------|-------|---------|-------|
| 2 | 4 | | | | | |

## PAGES: Make a list of left-hand page numbers from any book

## EVEN

All your answers are **even** numbers.
Which of these are **even** numbers?

18  13  26  7  37  42  10  35  4

How can you tell if a number is **even**
just by looking at it?

## ADD A COUPLE

0 → 2 → 4 → 6 →

2 → 4 → 6 →

4 →

6 →

8 →

# Joining Multiples

Join the multiples of 2 in order.
Use other colours to join multiples
of 3 and 7.

5
8
10
11
3
6
12
9
13
4
7
14
2
1
15
16
18
17
19
20
27
21
23
25
22
24
26

# Pictures from Multiples
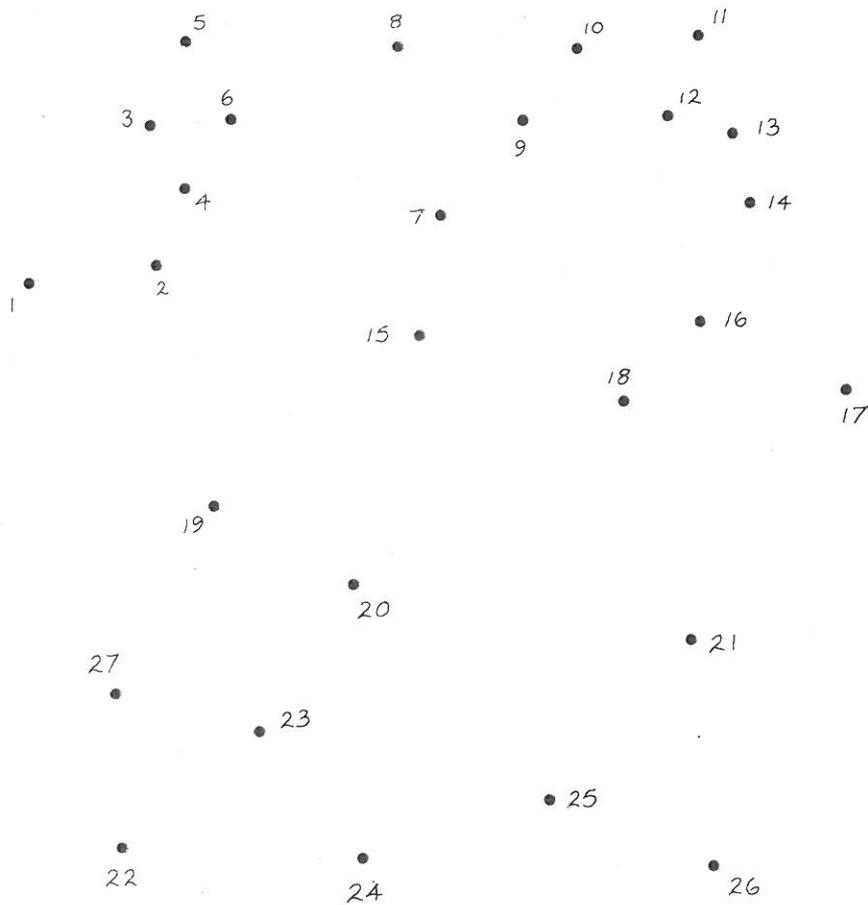
Join the dots for the multiples of 3.

Join the dots for the multiples of 4.
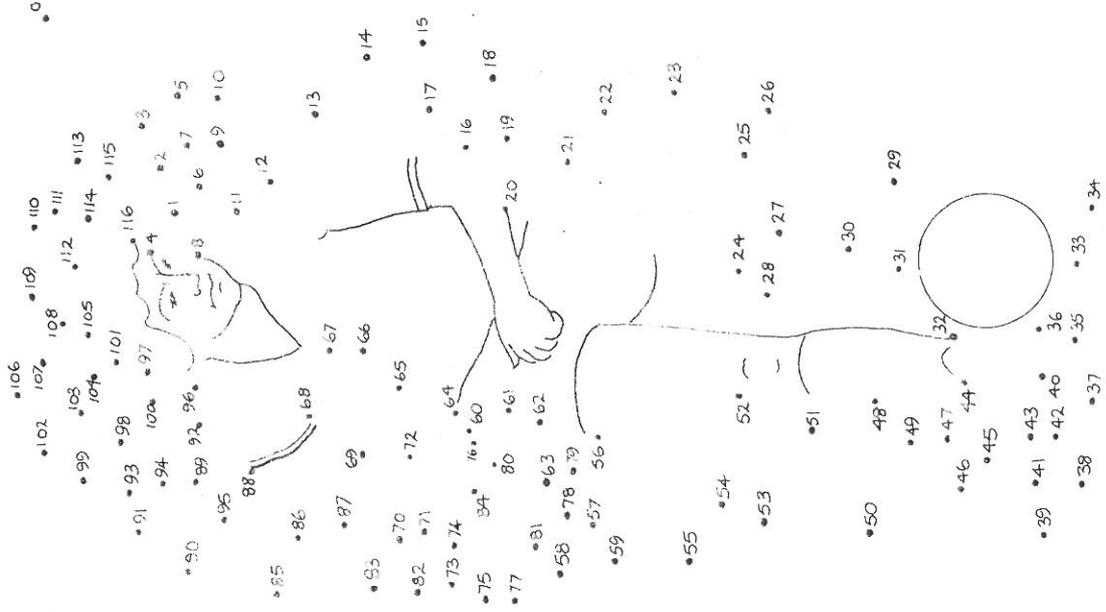
Join the dots for the multiples of 5.
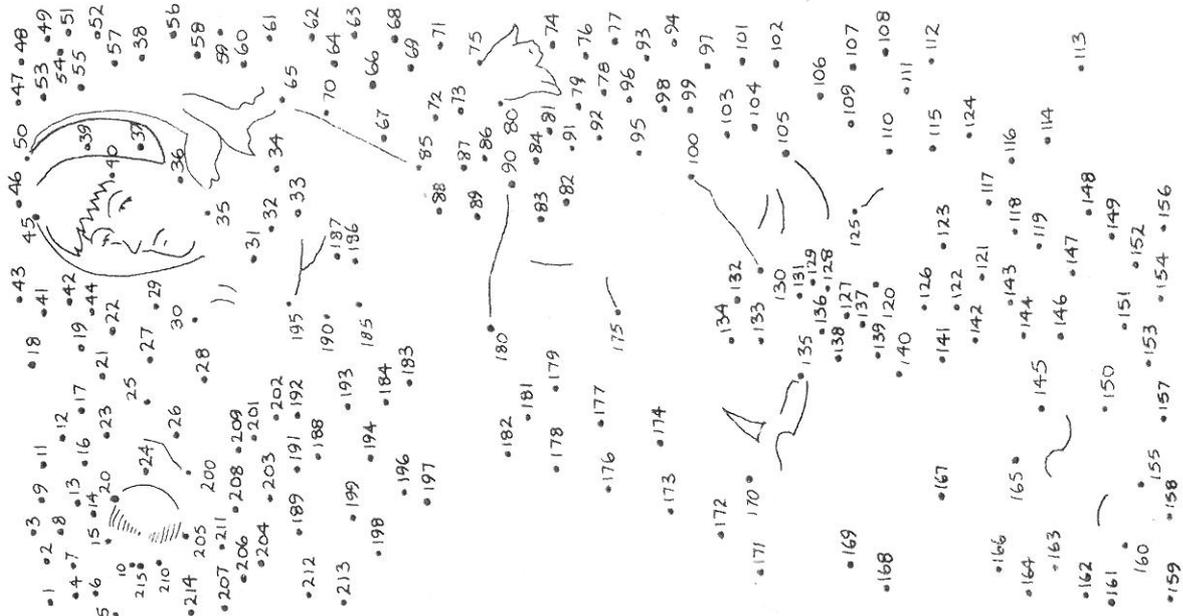
Rectangle Numbers

Remember what a rectangle is.
Copy and complete:-

(1) ⋮⋮⋮  This shows that 2 x 3 = ⬛

(2) ••••••  This shows that 2 x 6 = ⬛
    ••••••

(3) ••••  This shows that ⬛ x ⬛ = ⬛
    ••••
    ••••

---

Copy these statements and draw the dot pattern for each one.

(4) 3 x 5 = 15     (5) 7 x 4 = ⬛     (6) ⬛ x 6 = 24

---

Copy each of these dot patterns and then write the correct statement underneath:
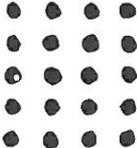
(7) ••••     (8) ••••     (9) ••••••••
    ••••         ••••         ••••••••
                 ••••
                 ••••

---

Question (6) shows <u>one</u> way of arranging 24 dots in a rectangle pattern.  There are other ways.

(10) Find as many different rectangle patterns as you can for 24.  Label each one.

(11) Do the same for 30.

You will need: pegboard, pegs

## More Rectangle Numbers

> Any number which can make a rectangle is called
> a rectangle number.

Make this rectangle.



15
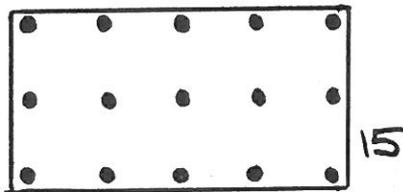
Copy and complete:-
This rectangle of dots
shows that 15 is a
████████ number.

(1) Find 10 more rectangle numbers.
Draw a pattern for each one.  Put a box round each one
and label it like this ⟶ [∷ ∷] 6

(2) a) How many <u>different</u> rectangle patterns can you find
for 18?
Draw each one.

b) How many can you find for 12?
Draw them.

c) How many for 20?
Draw them.

(3) Can you find any numbers that have 3 or more different
rectangle patterns?
If you can, draw each pattern.
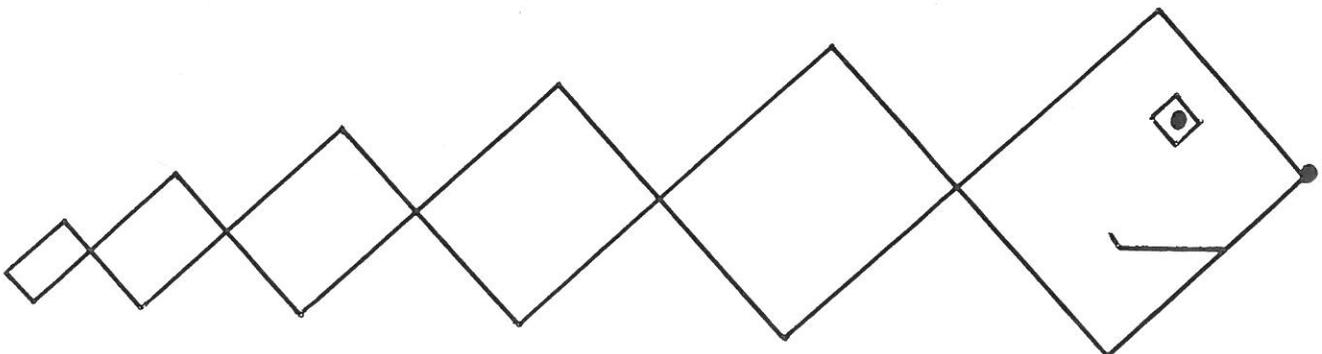
You will need micro-program **Numbers**.

# PATTERN SPOTTING

Choose 'Multiples'.
Make the computer colour these four patterns.

**1.**



**2.**

**3.**
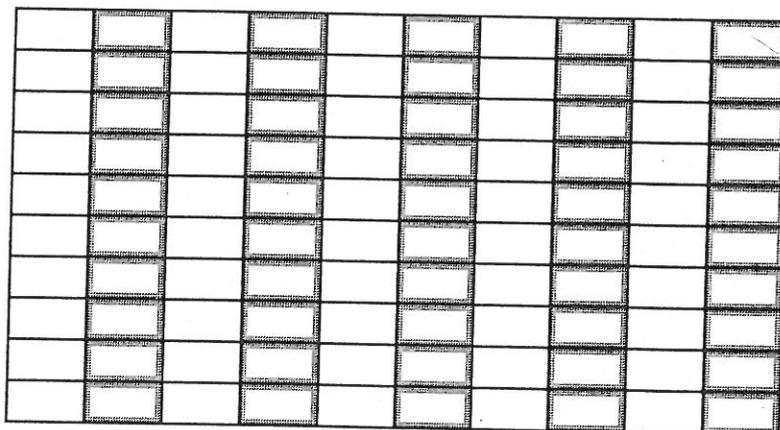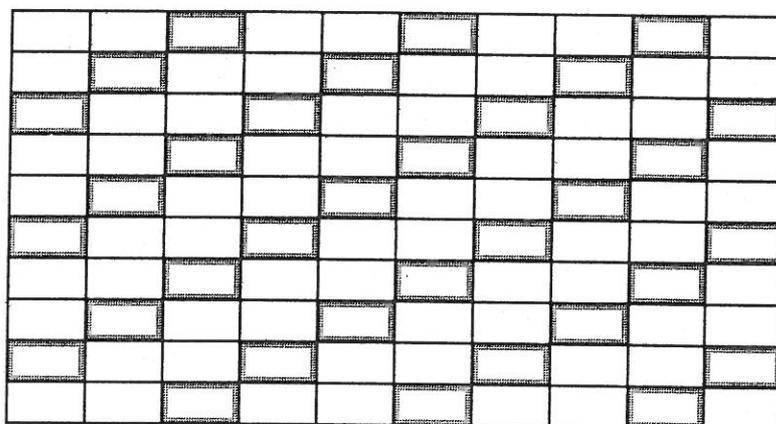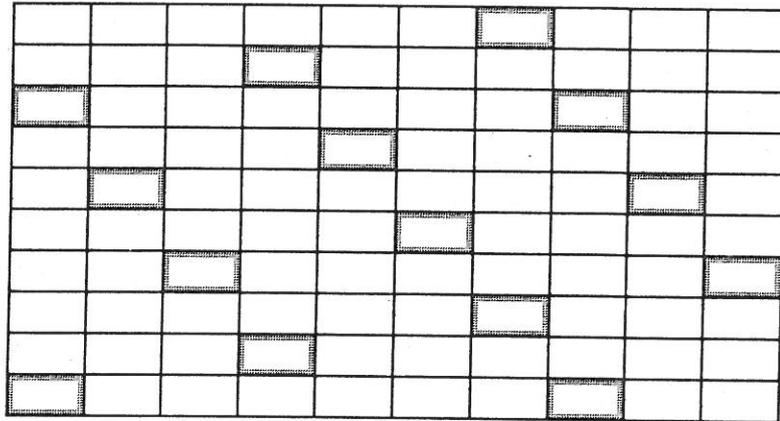
**4.**
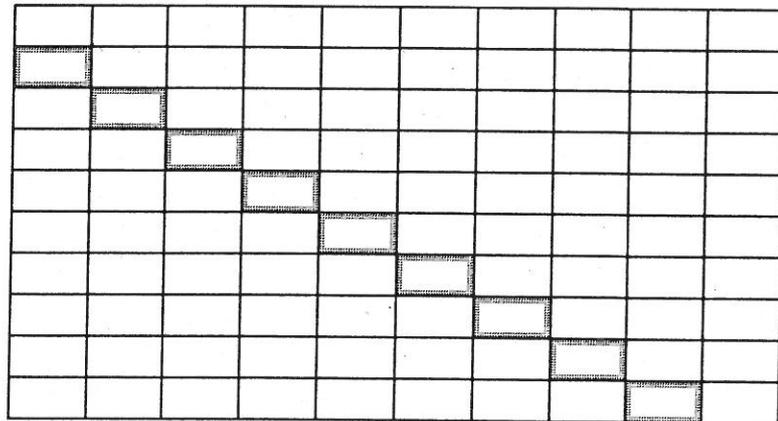


*Can you make some different multiple patterns?*

# Number Clues

1.  There are five cards in this envelope.
    Each one describes a number less than 10.

    **What are the numbers?**

2.  Write clues for the other whole numbers which are less than 10.

    **Test them on a friend.**

**CLUE**

**A**
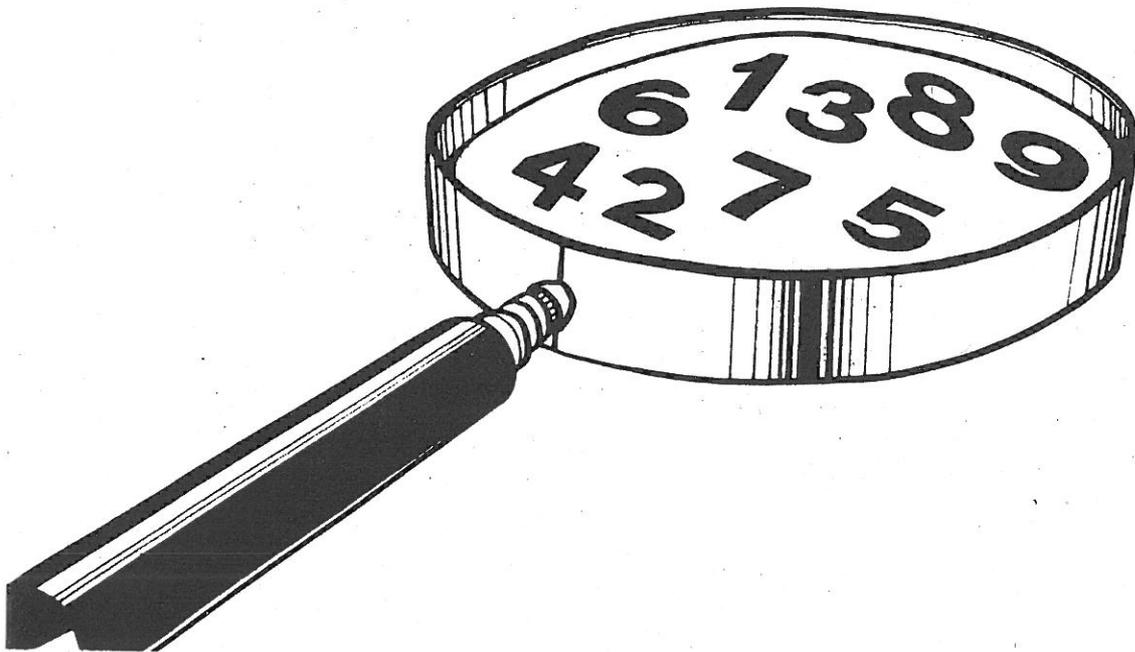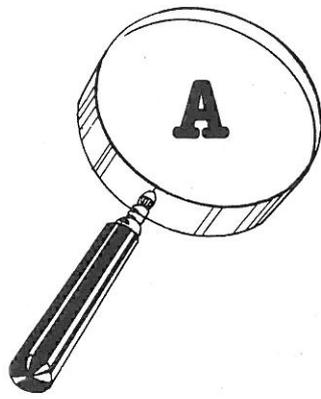
an even number,
more than six.

---

**CLUE**

**B**
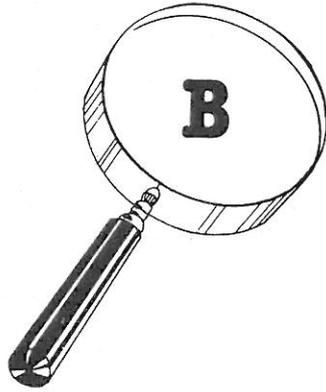
an even number,
can be divided by
three.

---

**CLUE**

**C**
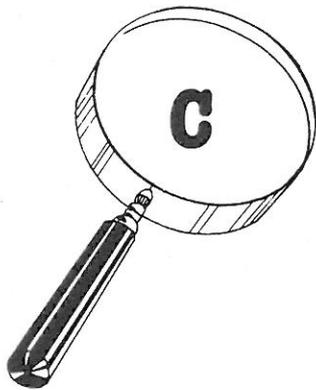
an odd number,
a quarter of twenty.

---

**CLUE**

**D**
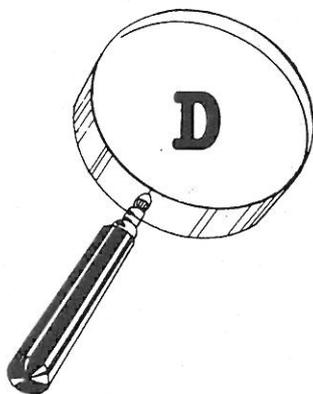
can be divided by
three,
is more than six.

---
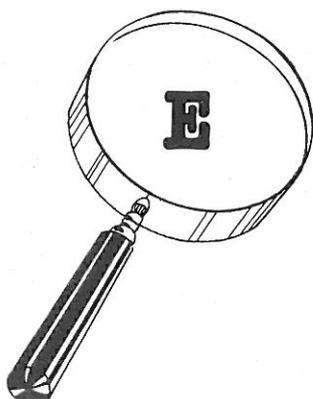
**CLUE**

**E**

six less than
half of twenty.

# Lines

*— a game for 2 players*

1. Each player chooses a colour.

2. Take turns to roll the dice.

3. Cover a multiple of your score if you can.
   *Only one counter on each square!*

   Example:
   With ⚁ you could cover 4, or 8, or 12, . . .

4. The winner is the first person to cover
   4 numbers in a line.

| 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |

**Targets for**

# Play Your Cards Right

| | |
|---|---|
| Target!<br><br>**Nearest even number to 500** | Target!<br><br>**Nearest number to 100** |
| Target!<br><br>**Largest odd number** | Target!<br><br>**Largest even number** |
| Target!<br><br>**Nearest odd number to 400** | Target!<br><br>**Nearest number to 250** |
| Target!<br><br>**Nearest number to 723** | Target!<br><br>**Nearest number to 1000** |
| Target!<br><br>**Smallest odd number** | Target!<br><br>**Smallest even number** |
| Target!<br><br>**Largest number** | Target!<br><br>**Smallest number** |

# SQUARES

You will need to use the
**Micro**SMILE program CIRCLE.

Can you make this square?
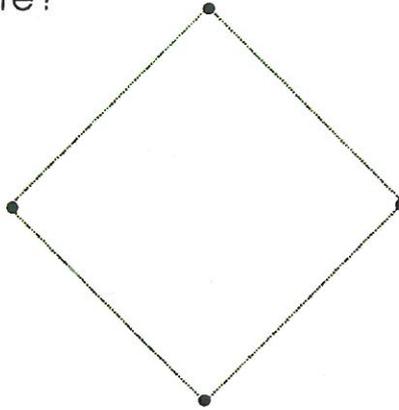


Points:          ?
Jump size:    ?

Lines:           ?
Revolutions:  ?

Choose a different number of points for the circle.

Can you still make a square?

When can you make a square?

You will need a pegboard and pegs.

# FACTORS

1) Arrange 12 pegs in a rectangle.

● ● ● ●

● ● ● ●    **12 = 3 × 4**

● ● ● ●
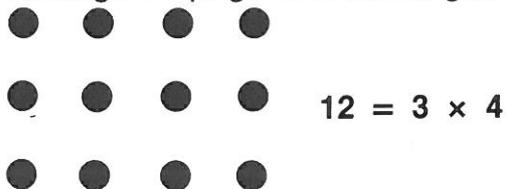
So 3 is a factor of 12, and 4 is a factor of 12.

2) What do these show?

(a) ● ● ● ● ●     (b) ● ●     (c) ● ● ● ● ● ● ●

   ● ● ● ● ●      ● ●

   ● ● ● ● ●      ● ●

                 ● ●

                 ● ●

                 ● ●
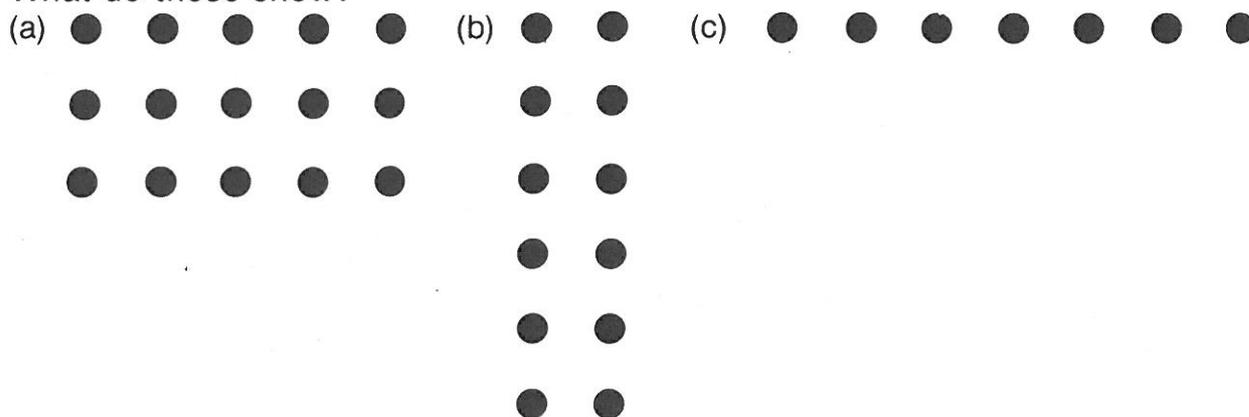
3) Arrange 16 pegs in a rectangle in as many ways as possible.
Draw each rectangle pattern.
There is also a straight line pattern.
Draw the straight line pattern.
*Write*   {factors of 16}   =   {■, ■, ■, ■, ■}

4) Copy and complete:   (a) {factors of 12}   =   {■, ■, ■, ■, ■, ■}

                    (b) {factors of 20}   =   {■, ■, ■, ■, ■, ■}

                    (c) {factors of 21}   =   {■, ■, ■, ■}

                    (d) {factors of 9}   =   {■, ■, ■}

5) What are the factors of (a) 5   (b) 30   (c) 23   (d) 24?
*Do this for some other numbers.*

6) Describe, in your own words, what a factor is.

A game for 2 or more players.

# TRIOMINOES

You will need to use the 20 red triominoes and
the 20 blue triominoes from SMILE Cut-out
cards 0474A and 0474B
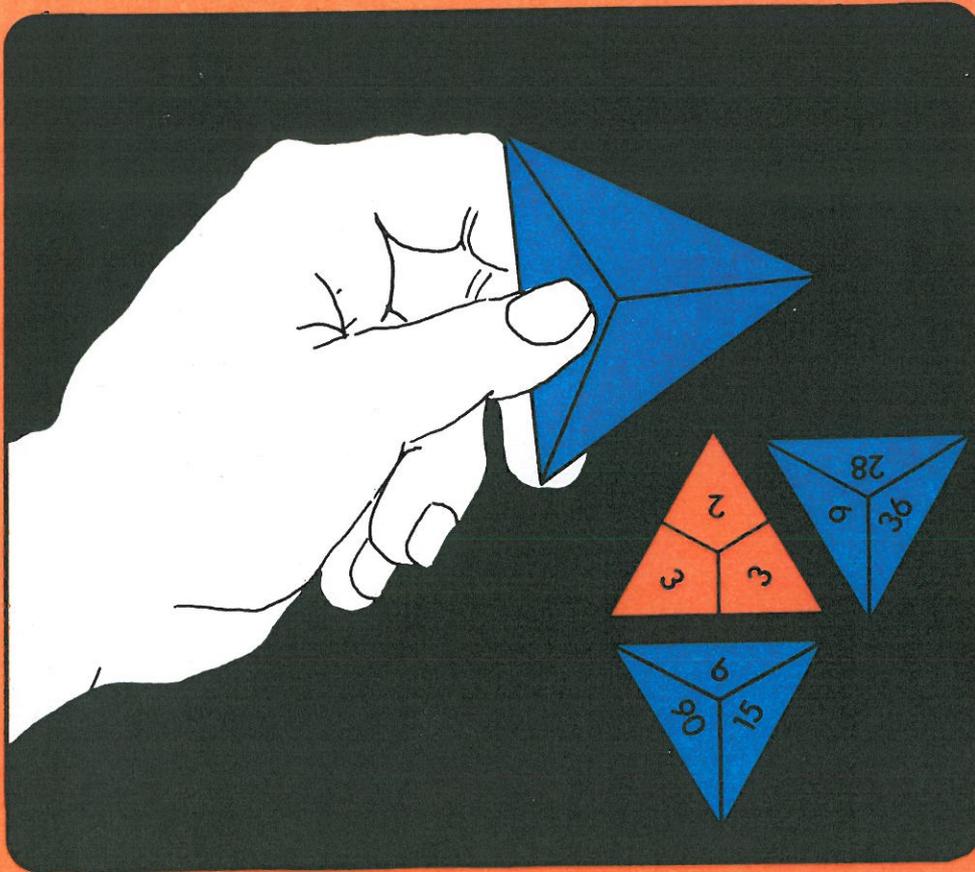
# RULES

1. Share out the triominoes.

2. Take turns to place a triomino on the table.

3. Each red triomino must be placed next to a blue one (and vice versa), so that the **product** of 2 red numbers is equal to a blue number — see facing page.

4. Any player who cannot go misses that turn.

5. The winner is the first player to use up all his triominoes.

The first four moves of a new game:



$(6 = 2 \times 3)$

$(9 \times 4 = 36)$

$(9 = 3 \times 3)$

Cut along the **dotted** lines.

Cut along the **dotted** lines.