

# SMILE WORKCARDS

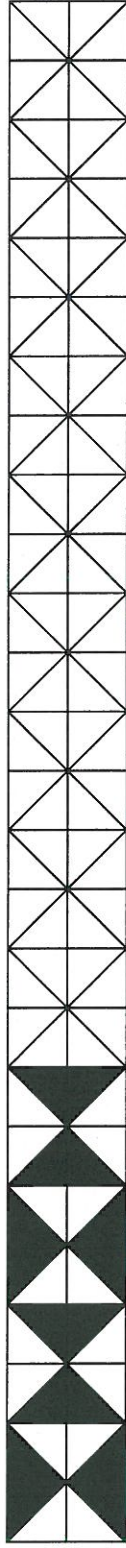
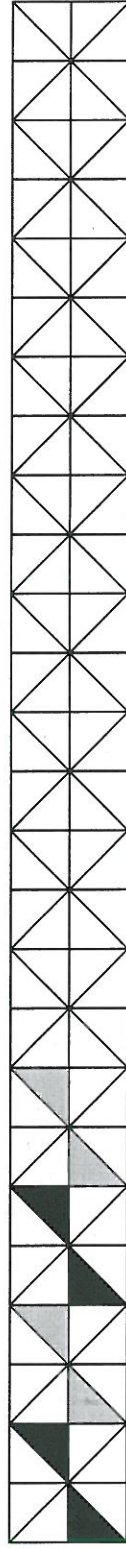
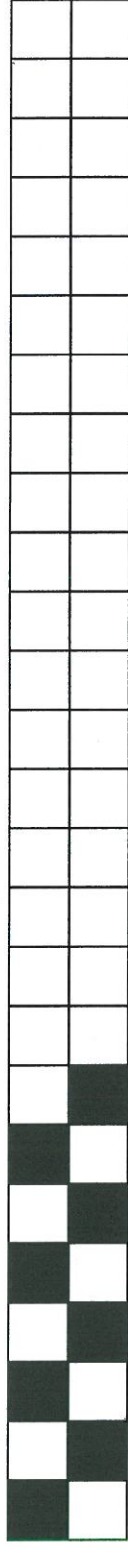
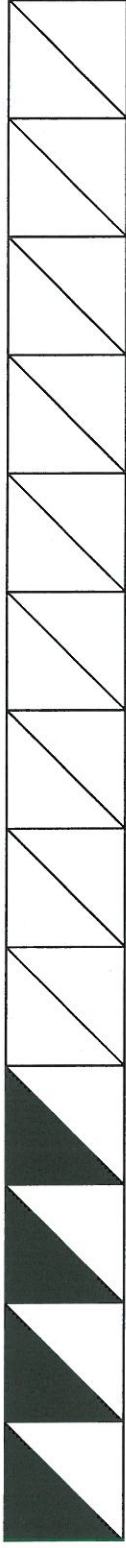
## Combined Transformations Pack One

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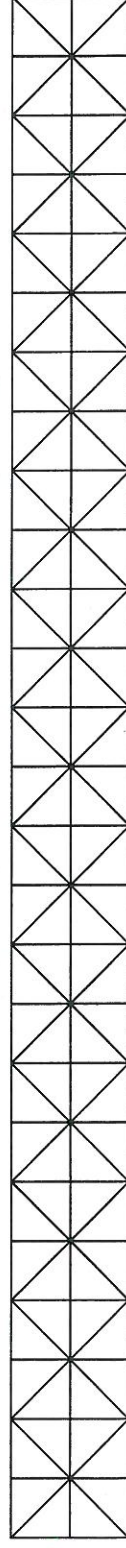
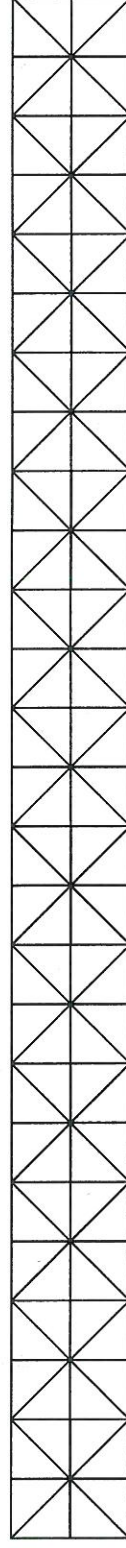
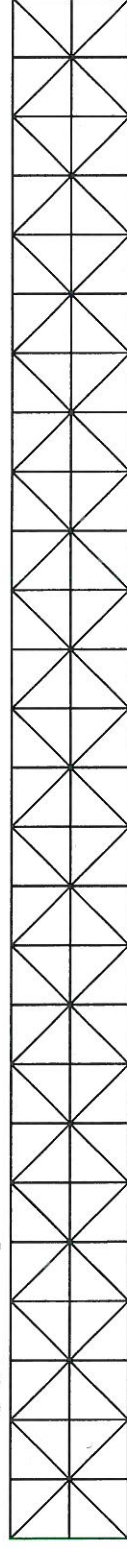
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# Patterns on a line

- Continue these patterns.



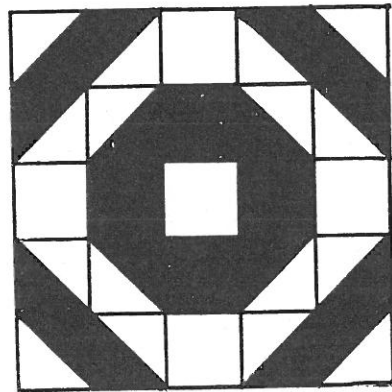
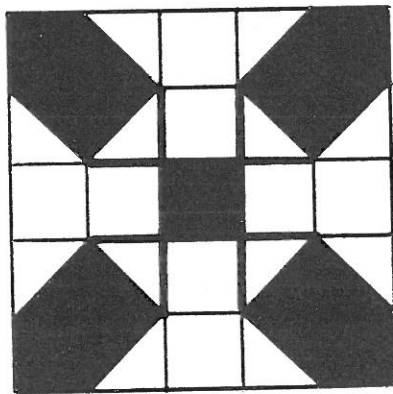
- Make up your own patterns.



smile

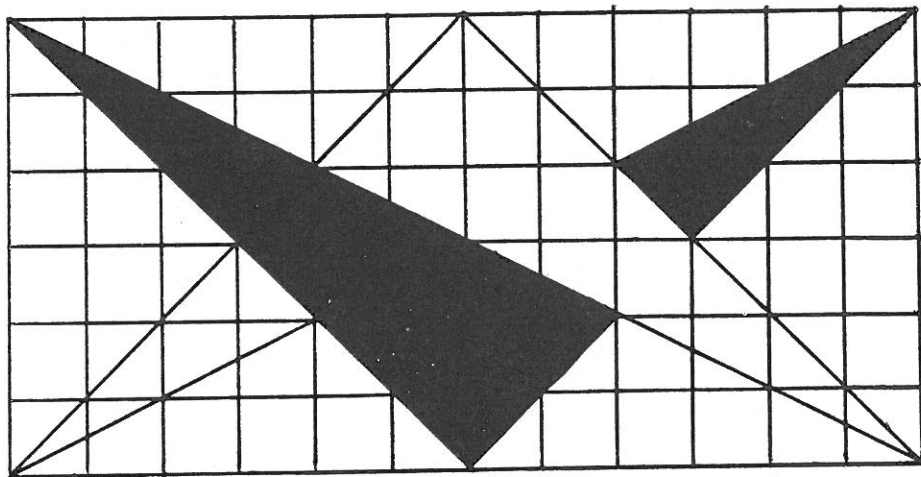
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You will need: cm. squared paper, colours

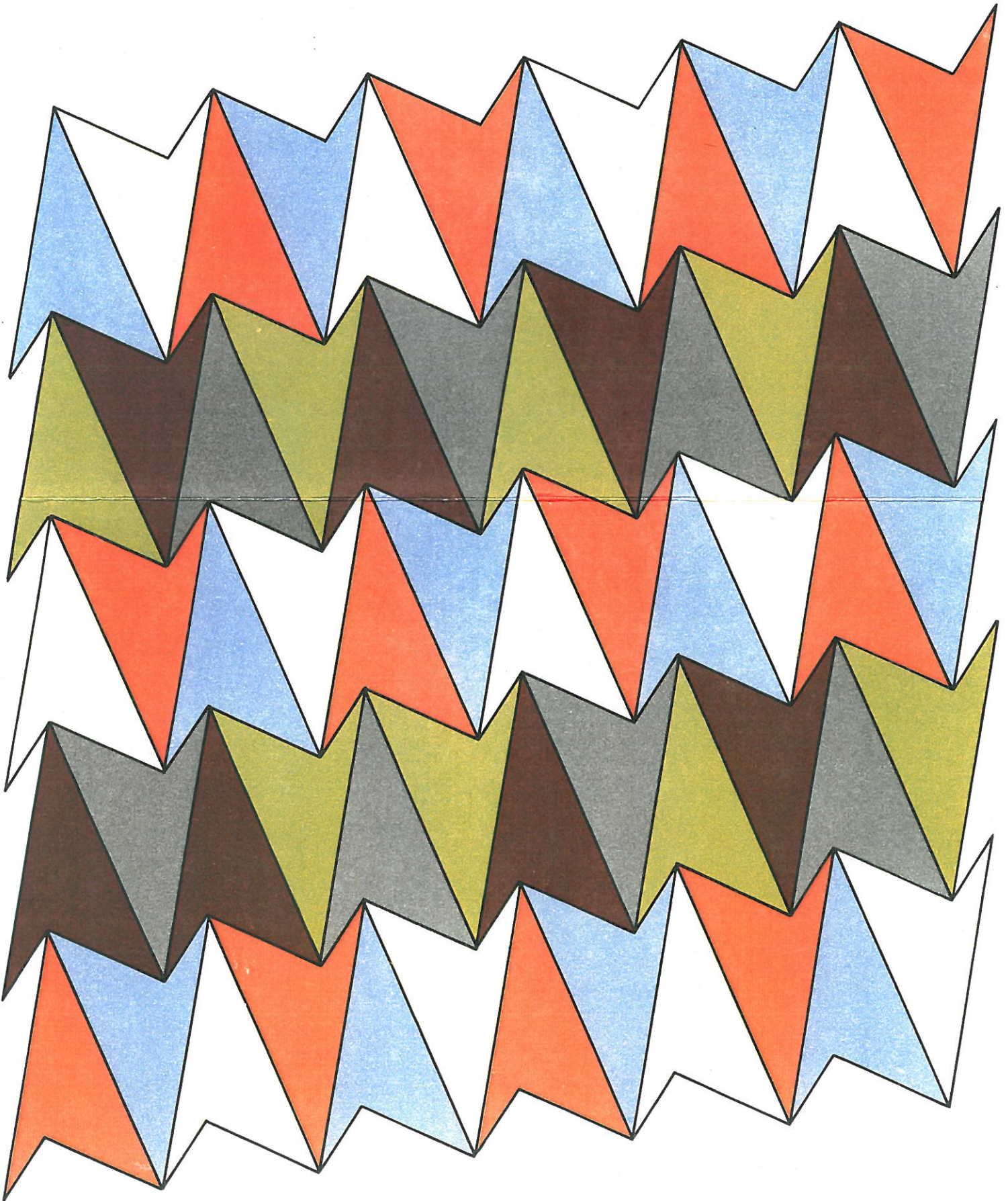


## Patterns With Squares

Copy these, or try some of your own.



# LOCATE THE ERROR



# Board Order

– a game for 2 to 4 players

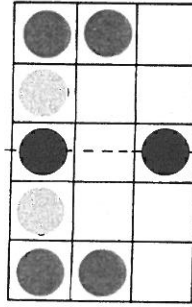
You will need counters and a board for each player.

1. Get someone to choose 15 counters for you.

2. Each player must use at least 8 counters to make a pattern with symmetry.

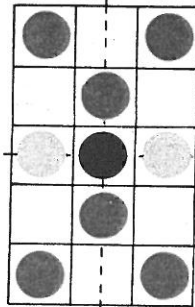
## 3. Scoring

One line of symmetry –  
score 3 points



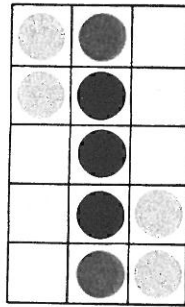
Example: One line of symmetry

Two lines of symmetry –  
score 5 points



Example: Two lines of symmetry

Point symmetry – no lines of  
symmetry but the  
board looks the same  
when turned half-way round –  
score 10 points



Example: Point symmetry

**Bonus Points!** If you use more than 8 counters, each extra counter scores 1 bonus point.

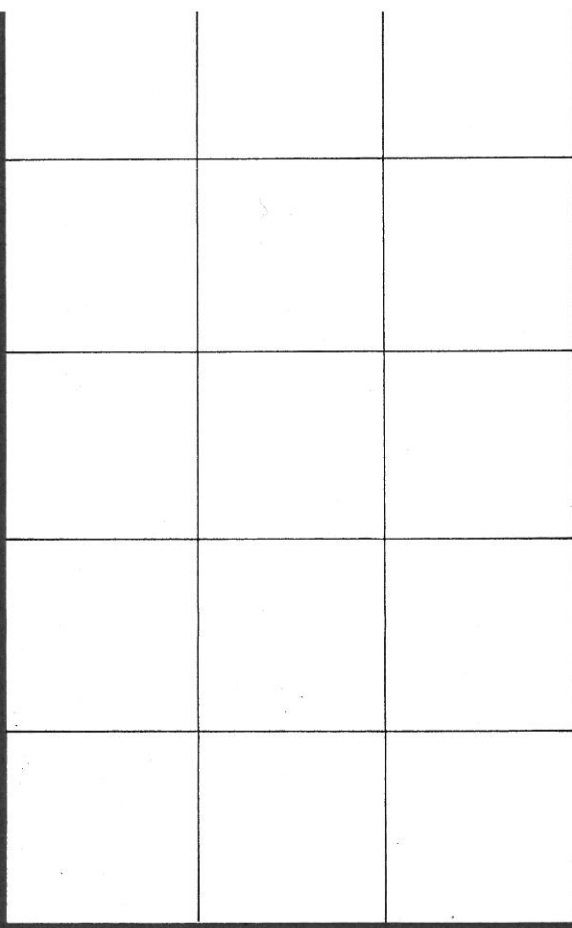
4. Calculate the score for your own pattern.

5. Play 5 rounds. The player with the highest total wins.

1675A

# Board Order

– a game for 2 to 4 players



One line of symmetry – score 3 points

Two lines of symmetry – score 5 points

Point symmetry – score 10 points

## Bonus Points

If you use more than 8 counters, each extra counter scores 1 bonus point.

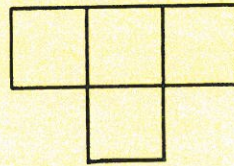
You will need cm squared paper,  
scissors and glue.

Smile 0048

## Tetromino

A tetromino is made  
by joining 4 squares edge  
to edge.

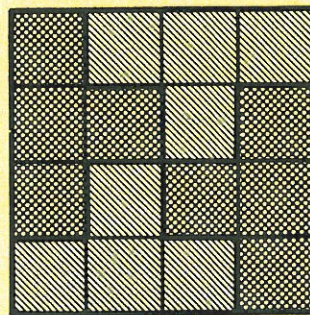
*This is a T-tetromino*



Draw all the different tetrominoes.

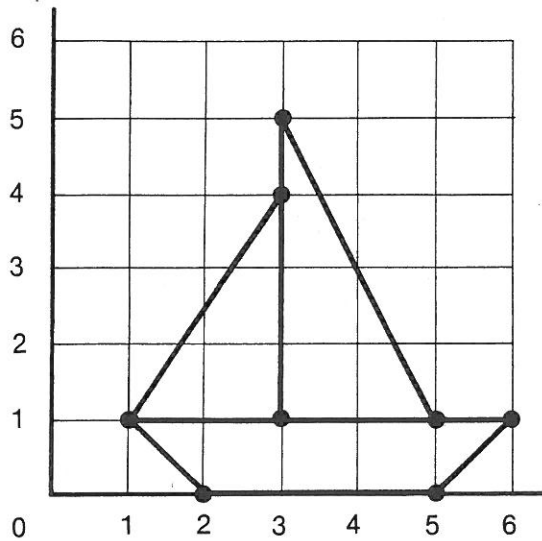
Four T-tetrominoes  
make a square.

*Can you make squares  
from the other  
tetrominoes?*



# Moving Picture

1. Draw the boat and make a list of the ordered pairs for the points marked.



- ( 3, 5 )
- ( 3, 4 )
- ( ■, ■ )
- ( ■, ■ )
- ( ■, ■ )
- ( ■, ■ )
- ( ■, ■ )
- ( ■, ■ )

2. Double each second number and write the new list: ( 3, 10 )  
( 3, 8 )

Plot the points. .  
 Draw the new picture. .  
 Explain how it has changed. .

3. Go back to the first list.  
 Add 2 to each first number and write the new list: ( 5, 5 )

Draw the new picture. .  
 Explain how it has changed. .

4. Go back again to the first list. Multiply each first number by 3: ( 9, 5 )

Draw the picture and explain how it has changed. .

5. Without drawing a new picture, explain how the picture will change if you multiply the second number by 3.

6. How will it change if you add 2 to the second number?

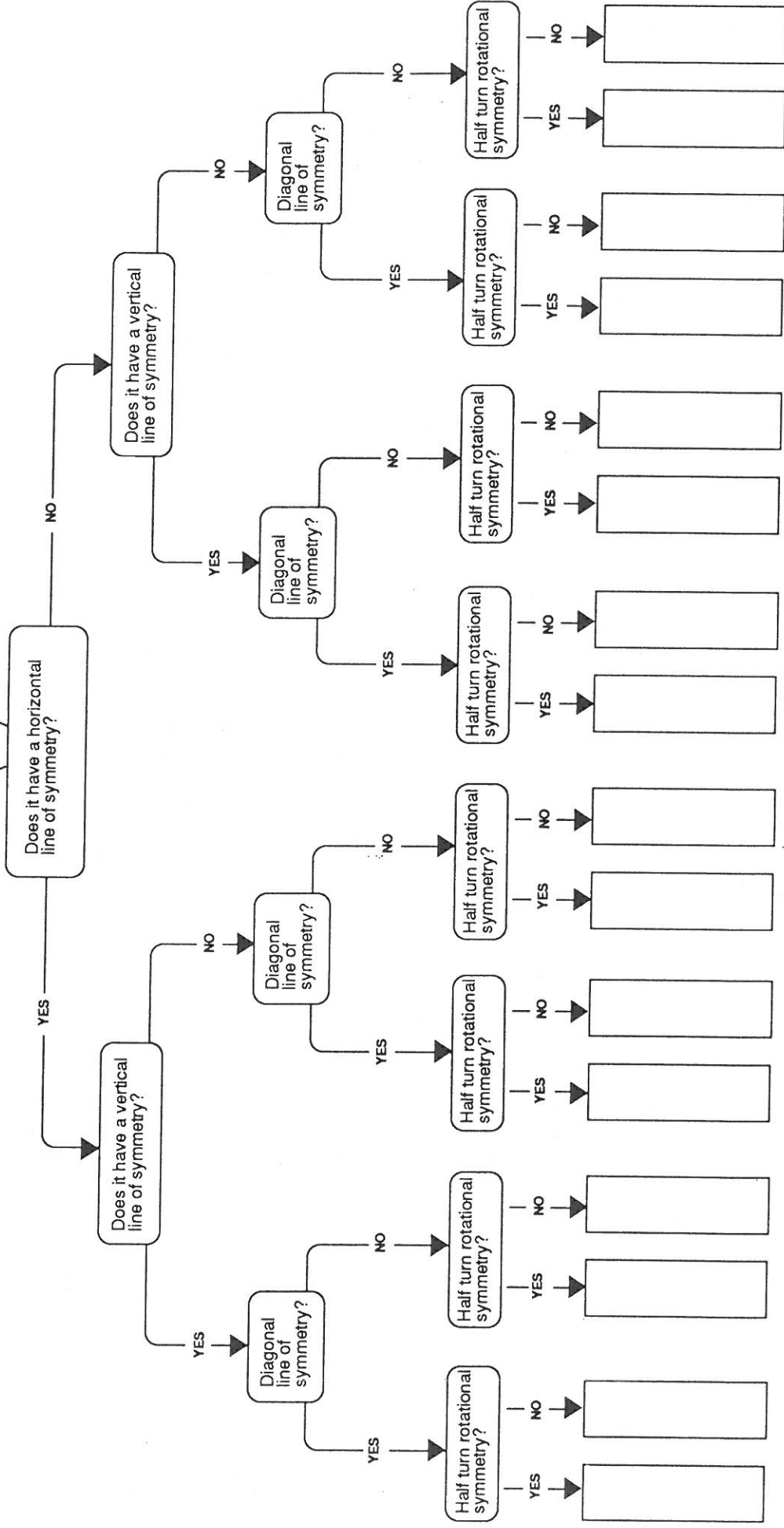
# Alphabet

# Symmetry

H / J K L M O P Q R S T U V W  
G F E D C B A N X Y Z



Put each letter into a box.



You may like to design a similar sorting diagram for the numbers 0 - 9.

Why are most boxes empty?



# Rotational and line symmetry review

An activity for two. You will both need a copy of this worksheet.

Some shapes have line symmetry



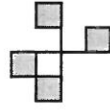
Some shapes have rotational symmetry



Some shapes have both



Some shapes have neither



### 1. On your own:

- Cut out the shapes below.
- Arrange them in the correct regions on the Venn diagram.

### 2. Together:

- Compare your answers.
- When you have agreed, stick them down.

### 3. Challenge:

- Draw 4 shapes of your own, one to go in each region.

