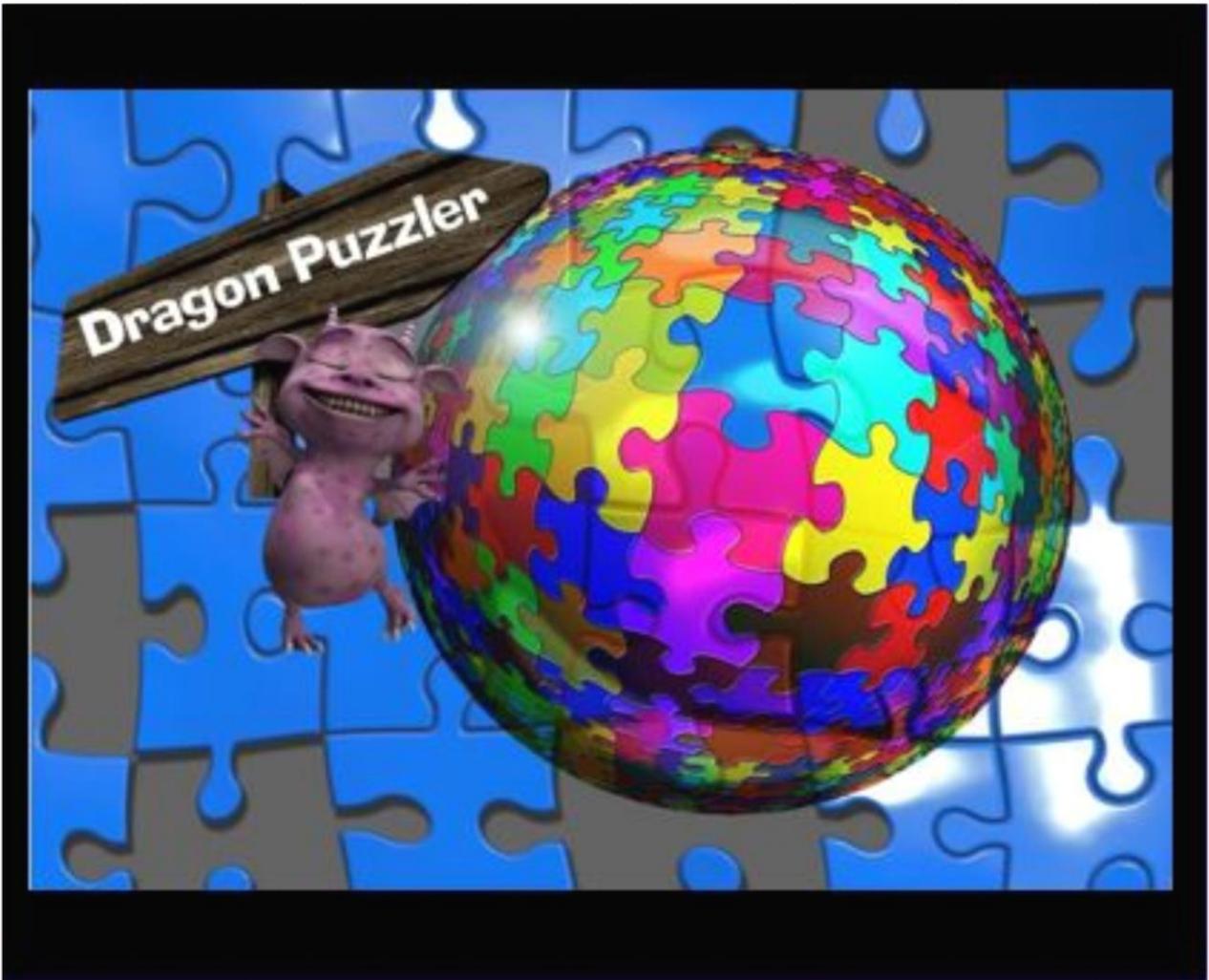


# Picture Puzzles



## Pictorial Numeracy Challenges for KS2



## Numeracy in Pictures

Select 3 numbers to  
make this true

$$\bigcirc + \bigcirc + \bigcirc = 30$$



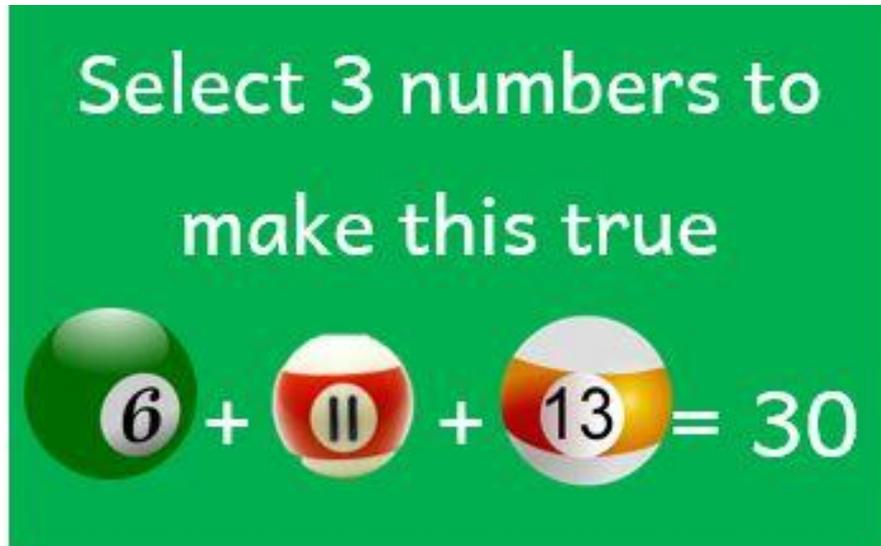
### Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

# Numeracy in Pictures

## One solution



## Key Questions

1. Is this how you solved it?
2. How many different methods have your class used to solve the question?
3. Which is the most effective method?
4. Can you explain your method so that someone else could use it?

**Is your method more effective than the solution above?**

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# Numeracy in Pictures



January							February							March							April						
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2	31	1	2	3	4	5	6	28	29	1	2	3	4	5	27	28	29	30	31	1	2
3	4	5	6	7	8	9	7	8	9	10	11	12	13	6	7	8	9	10	11	12	3	4	5	6	7	8	9
10	11	12	13	14	15	16	14	15	16	17	18	19	20	13	14	15	16	17	18	19	10	11	12	13	14	15	16
17	18	19	20	21	22	23	21	22	23	24	25	26	27	20	21	22	23	24	25	26	17	18	19	20	21	22	23
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May							June							July							August						
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15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
29	30	31	1	2	3	4	26	27	28	29	30	1	2	24	25	26	27	28	29	30	28	29	30	31	1	2	3
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September							October							November							December						
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25	26	27	28	29	30	1	23	24	25	26	27	28	29	27	28	29	30	1	2	3	25	26	27	28	29	30	31
2	3	4	5	6	7	8	30	31	1	2	3	4	5	4	5	6	7	8	9	10	1	2	3	4	5	6	7



## Question

There are 4 popular dates for a Monday. What are they?

## Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

# Numeracy in Pictures

## One solution



The 31<sup>st</sup> is on a Sunday in January and in July. It isn't on a Friday for the whole of 2016.

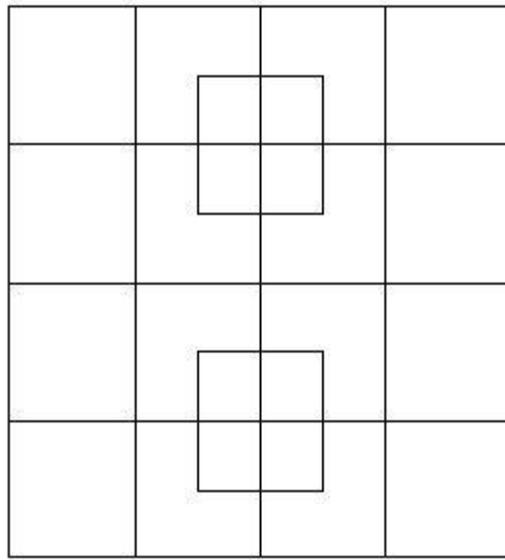
### Key Questions

1. Is this how you solved it?
2. How many different methods have your class used to solve the question?
3. Which is the most effective method?
4. Can you explain your method so that someone else could use it?

Is your method more effective than the solution above?

Tweet me [@CullyEducation](https://twitter.com/CullyEducation)

# Numeracy in Pictures



## Question

How many squares can you see?

## Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

# Numeracy in Pictures

One solution

**40.**

**16 simple squares.**

**Nine 2x2, four 3x3, two smaller squares with 4 little ones in each, and one large square.**

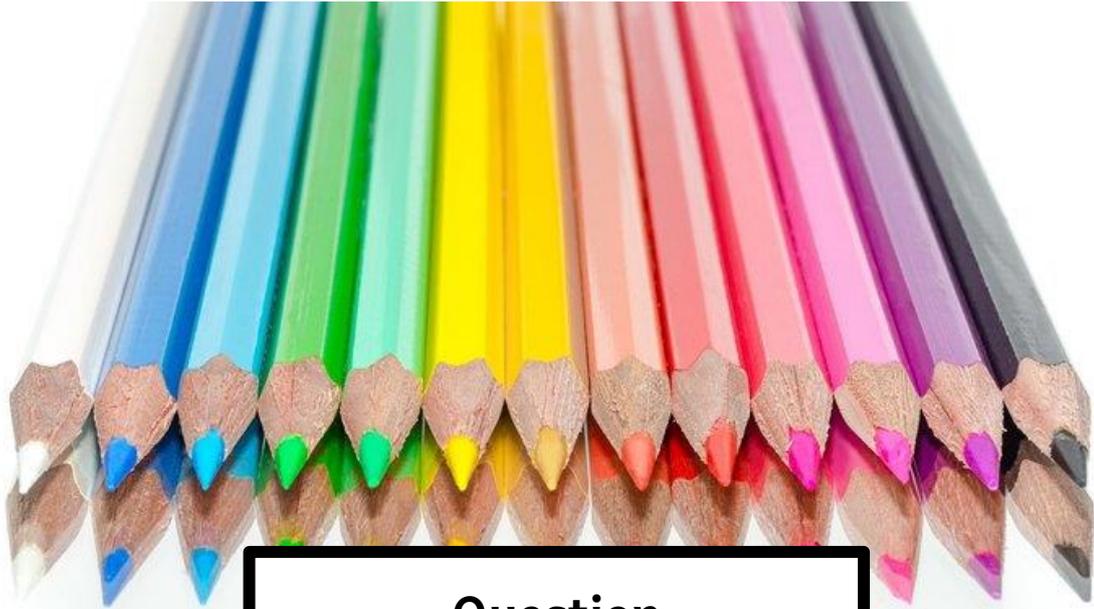
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## Numeracy in Pictures



### Question

The 116<sup>th</sup> pencil would be red.  
True or false?

### Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

## Numeracy in Pictures

One solution

# False.

It would be purple.

There are 13 pencils.

The 117<sup>th</sup> pencil would be black ( $13 \times 9$ ) so the 116<sup>th</sup> pencil would be the one before.

### Key Questions

5. Is this how you solved it?
6. How many different methods have your class used to solve the question?
7. Which is the most effective method?
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Is your method more effective than the solution above?

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## Numeracy in Pictures

$$\text{Apple} + \text{Apple} = 18$$

$$\text{Pear} + \text{Pear} + \text{Apple} = 45$$

$$\text{Pear} \div \text{Eggplant} = 3$$

$$\text{Apple} + \text{Pear} + \text{Eggplant} = ?$$

### Question

What's the answer?

### Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

# Numeracy in Pictures

## One solution

 = 9

 = 18

 = 6

**Total is  
33**

## Key Questions

9. Is this how you solved it?
10. How many different methods have your class used to solve the question?
11. Which is the most effective method?
12. Can you explain your method so that someone else could use it?

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# Numeracy in Pictures

# 2016



January							February							March							April						
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25	26	27	28	29	30	1	23	24	25	26	27	28	29	27	28	29	30	1	2	3	25	26	27	28	29	30	31
2	3	4	5	6	7	8	30	31	1	2	3	4	5	4	5	6	7	8	9	10	1	2	3	4	5	6	7



## Question

This date occurs two times on a Sunday and never on a Friday. What's the date?

## Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

# Numeracy in Pictures

## One solution



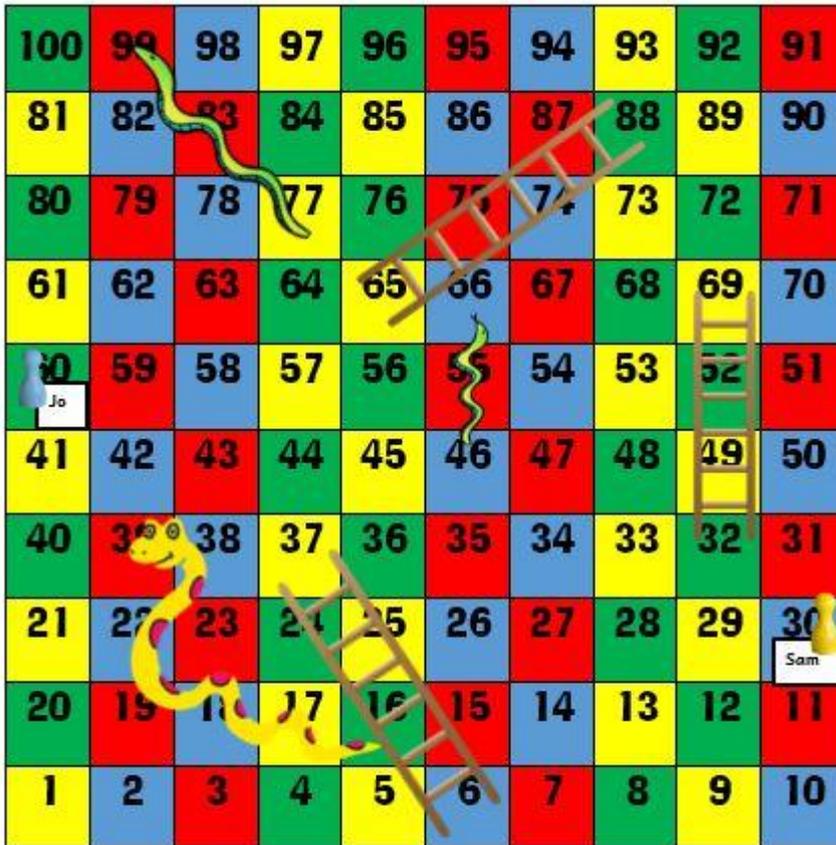
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### Key Questions

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Is your method more effective than the solution above? Tweet me [@CullyEducation](https://twitter.com/CullyEducation)

## Numeracy in Pictures



### Question

Jo throws a 5, a 6 and a 5. Sam throws a 2, a 6 and a 3 so Jo is in the lead. True or false?

### Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

## Numeracy in Pictures

One solution

**False.**

**Sam is in the lead on 78. Jo will be on 77 as she will slide down the snake.**

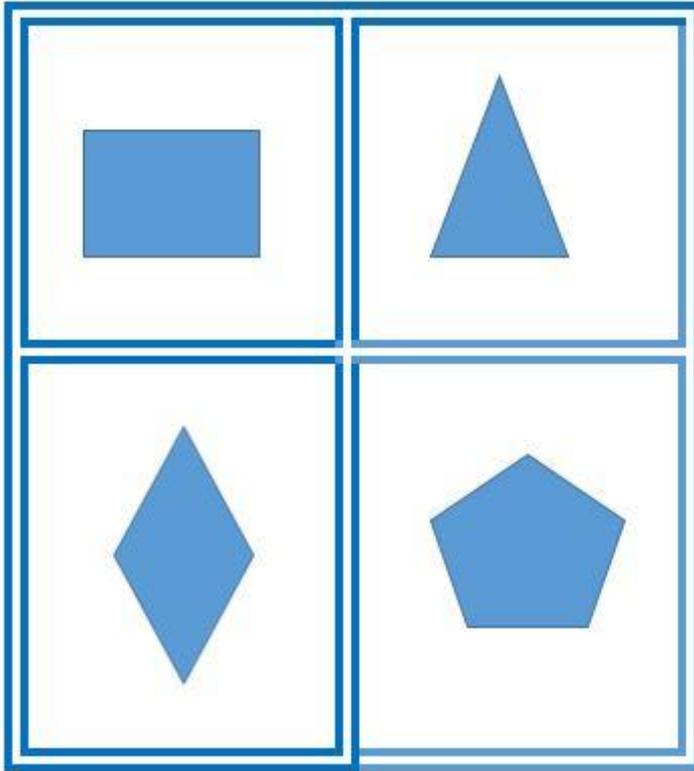
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## Numeracy in Pictures



### Question

Which is the odd one out?

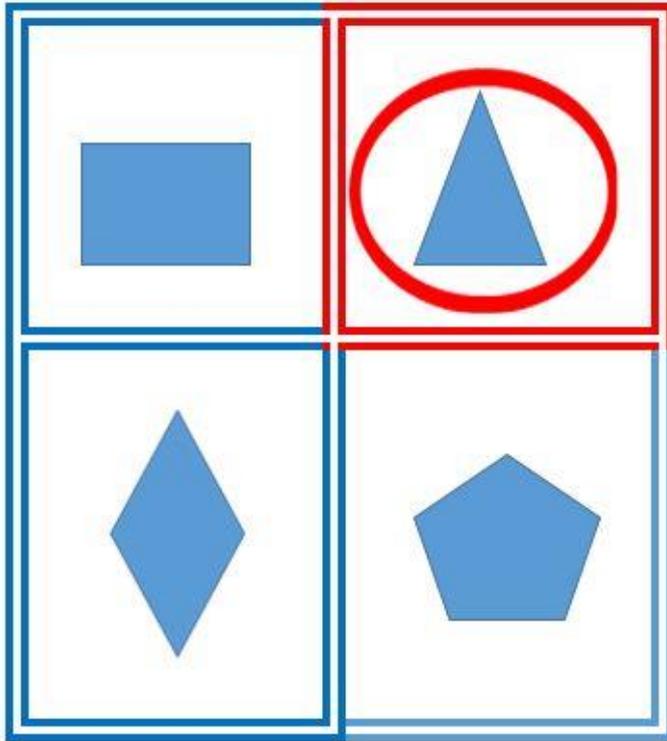
### Your Answer

Find a partner. Do they have the same answer as you?

Convince them that you are right!

# Numeracy in Pictures

## One solution



The triangle is the only shape that doesn't have an angle of at least  $90^\circ$ .

## Key Questions

5. Is this how you solved it?
6. How many different methods have your class used to solve the question?
7. Which is the most effective method?
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# Numeracy in Pictures



## Abacus Patterns

I can arrange a row of beads in lots of ways. You are only allowed one gap.



How many different ways can you find?

## Question

How many different ways can I arrange a row of beads?

## Your Answer

Find a partner. Do they have the same answer as you?

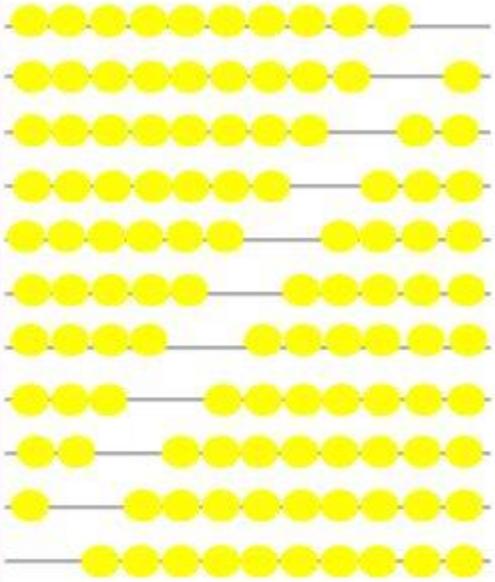
Convince them that you are right!

# Numeracy in Pictures

## One solution

**Abacus Patterns**

You can arrange them in 11 different ways



How many ways can you arrange 2 rows? 3 rows?

### Key Questions

13. Is this how you solved it?
14. How many different methods have your class used to solve the question?
15. Which is the most effective method?
16. Can you explain your method so that someone else could use it?

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