Saving Easter

Reasoning Maths Challenge Cards

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1. The Easter Bunny puts some eggs in a pattern: **pink, yellow, blue, pink, yellow, blue ...**

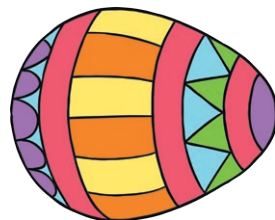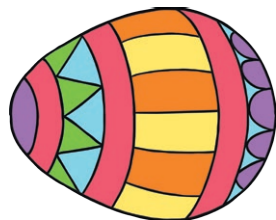   One of the foxes says that the 15th egg will be blue. Is he right?

   Explain your answer.

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2. If the egg goes through a quarter-turn clockwise, what would it look like?

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3. The Easter Bunny buys more paint for the eggs. She gets 14p change.

   a) What is the smallest number of coins she could have and what are they?

   b) What is the largest number of coins she could have and what are they?

4. The Easter Bunny reaches a road with houses from number 2 to number 18. How many even numbered houses will she visit?

Explain your answer.

5. The animals stack 10 eggs onto 2 shelves. How many different ways can they do this?

For example, 4 on one shelf, 6 on the other.

6. The Easter Bunny starts delivering eggs at 3 o'clock. She delivers for 6 and a half hours.

What time does she finish?

7. The animals put this pattern on some of the eggs:

Square, triangle, circle, square, triangle, circle...

What would the 11th shape be?

Explain your answer.

8. Eggs were being painted blue and yellow. If there were 20 eggs, what combinations of blue and yellow eggs could there be?

For example, 15 blue and 5 yellow.

9. The Easter Bunny has striped eggs and spotted eggs. If she had 2 eggs, what combinations could she make?
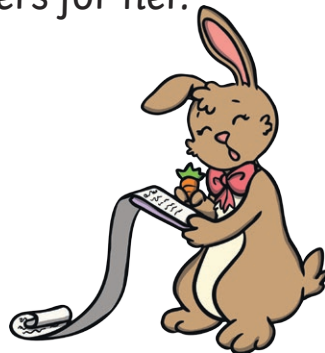
10. The Easter Bunny was writing down numbers, to keep count of her helpers. She wrote down all the even numbers to 20.

Write down all the odd numbers for her.

11. The boxes which hold the Easter eggs have two shapes on them. What could they be?
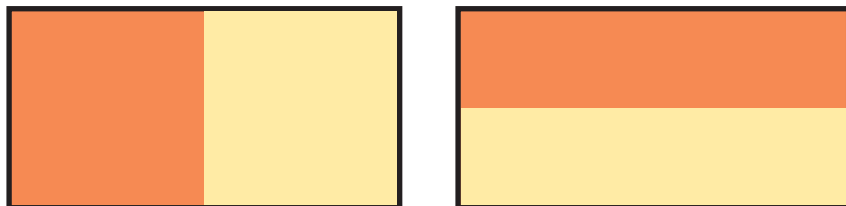
a) One has five corners.

b) One has 4 sides.

12. The Easter Bunny likes half of each box to be coloured green. Are these designs OK?

Explain your answer.

Answers

1. Yes. Blue is the third colour so all multiples of 3 are blue.

2. Egg 3: It has rotated $\frac{1}{4}$ clockwise.

3. A) 3 coins: 10p + 2p + 2p B) 14 coins: 14 x 1p

4. 9 even houses: 2, 4, 6, 8, 10, 12, 14,16, 18

5. 11 ways: 10 and 0, 9 and 1, 8 and 2, 7 and 3, 6 and 4, 5 and 5, 4 and 6, 3 and 7, 2 and 8, 1 and 9, 0 and 10

6. Clock 2: Half past 9

7. Triangle: S, T, C, S, T, C, S T, C, S, **T**

8. 20B and 0Y, 19B and 1Y, 18B and 2Y, 17B and 3Y, 16B and 4Y, 15B and 5Y, 14B and 6Y, 13B and 7Y, 12B and 8Y, 11B and 9Y, 10B and 10Y, 9B and 11Y, 8B and 12Y, 7B and 13Y, 6B and 14Y, 5B and 15Y, 4B and 16Y, 3B and 17Y, 2B and 18Y, 1B and 19Y, 0B and 20Y

9. St and St, Sp and Sp, St and Sp, Sp and St

10. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19

11. A) pentagon B) square, rectangle, quadrilateral, parallelogram, trapezium, rhombus, kite

12. All are representations of a $\frac{1}{2}$