Interpreting Infographics
UK Halloween spending 2013-2015

Name _____ Date _____

Calculator permitted. You must show all your working out, even if you use a calculator.

Spooky Spending

Britons are expected to spend £460m on Halloween this year (2015), a 4.1% increase on 2014.

An estimated 10 million pumpkins are grown in the UK each year. This year's crop was slow to ripen from green to orange but Morrisons supermarket is stocking 500,000 green pumpkins to prevent wastage.

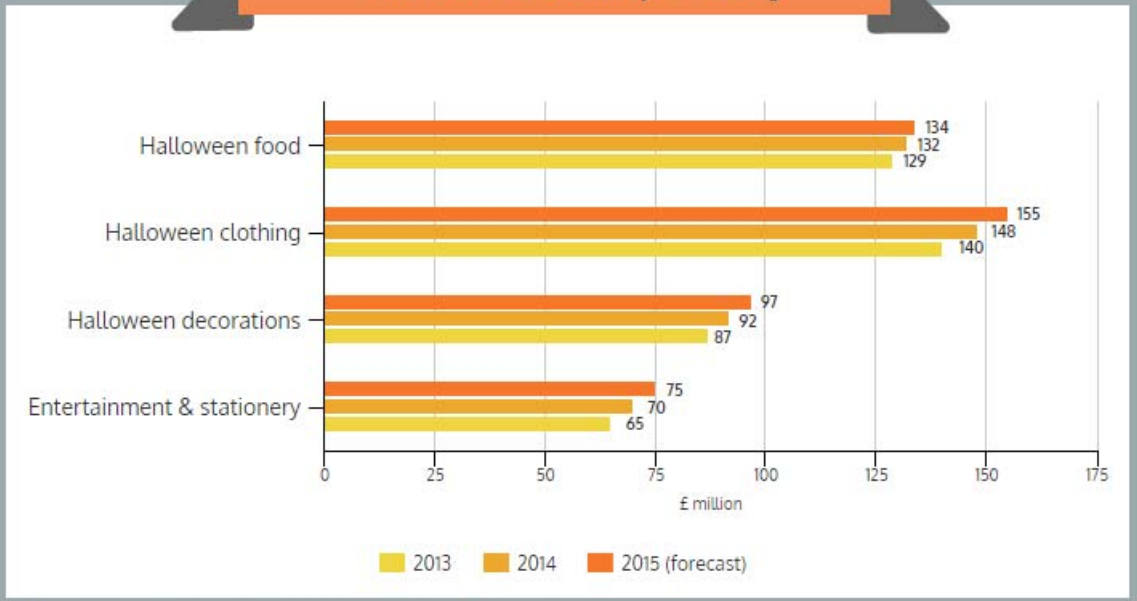
Asda, the biggest UK seller of Halloween costumes, expects half of all adult customers to buy Halloween food. Last year it was 40%.

Saturday boosts sales
This year sales increased sales are partly due to the date falling on a Saturday, which also marks the end of the half-term holiday for many school children.

28% increase in tiny munchkin pumpkin sales at Sainsbury's this year, and pimply superfreak pumpkin (bumpkins) sales rocket by 56%

Ebay UK
has reported sales of 2000 zombie costumes per day over the past two weeks.

UK Halloween Spending



Adapted from the Guardian (original source was Conlumino Insights).
http://www.theguardian.com/business/2015/oct/30/british-retailers-spooked-halloween-frenzy-shopping

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Entry 3

1. How many zombie costumes were sold on Ebay in **one** week?

2. List the Halloween items (Food, Clothes, Decorations, Entertainment & stationery) in order of money spent over the past three years (2013-2015). Start with the largest amount at the top.

Greatest spending _____

_____

_____

_____

3. In 2014, how much more was spent on clothing than in the previous year?

4. What do you notice about these two percentages that are mentioned in the infographic? **28%** **56%**

5a. The spending on Entertainment & stationery from 2013 to 2015 was £65m, £70m, £75m.
If it continues to follow this pattern, what will spending be in 2016?

5b. Look at the spending on Halloween decorations from 2013 to 2015. Is there a pattern?
Explain your answer.

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Level 1

6. Which type of pumpkin will have the largest sales value in 2015?
Circle the correct answer and explain why you chose it.

a) Tiny munchkin b) Pimply superfreak c) Can't tell from the information given.

7. How much in total was spent on Halloween in **2014**?

8. Write out the spending on food in 2014 using only the £ sign and digits.

9. Without using a calendar, work out what day of the week Halloween will be in 2016?
TIP: 2016 is a leap year.

10. Assuming the forecasted spend for 2015 is correct, calculate the mean average spending per year on Halloween clothing (from 2013-2015). Round your answer to the nearest million £.

11. In 2014 40% of ASDA adult customers bought Halloween food.
Write 40% as a:

a) fraction

b) decimal.

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Level 2

12 Change 56% to a fraction in the simplest possible form.

13. Compare the forecasted total spending in 2015 on the bar chart to the £460m stated on the infographic. Explain any differences.

14. Britons are expected to spend £460m this year, a 4.1% increase on 2014.

Use this information to calculate a) and b). Then show how you can check your answers.

a) the total spend in 2014

b) the increase in £ from 2014 to 2015.

15. By what percentage did spending on entertainment & stationery increase from 2013 to 2014?

Interpreting Infographics - Halloween spending
Answers and curriculum mapping

FUNCTIONAL MATHEMATICS **Coverage and Range statements (indicative only)**
Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels and the Adult Numeracy standards. ✓ *indicates the main coverage and range skills covered in this resource, although these may vary with the student group and how the resource is used by the teacher.*

Entry Level 3

a) add and subtract using three-digit numbers ✓
b) solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10 ✓
c) round to the nearest 10 or 100
d) understand and use simple fractions
e) understand, estimate, measure and compare length, capacity, weight and temperature
f) understand decimals to two decimal places in practical contexts
g) recognise and describe number patterns ✓
h) complete simple calculations involving money and measures ✓
i) recognise and name simple 2D and 3D shapes and their properties
j) use metric units in everyday situations
k) extract, use and compare information from lists, tables, simple charts and simple graphs ✓

Level 1

a) Understand and use whole numbers and understand negative nos. in practical contexts ✓
b) Add, subtract, multiply and divide whole numbers using a range of strategies ✓
c) Understand and use equivalences between common fractions, decimals and percentages ✓
d) Add and subtract decimals up to 2 decimal places
e) Solve simple problems involving ratio, where one number is a multiple of the other
f) Use simple formulae expressed in words for one- or two-step operations
g) Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature ✓
h) Convert units of measure in the same system
i) Work out areas and perimeters in practical situations
j) Construct geometric diagrams, models and shapes
k) Extract and interpret information from tables, diagrams, charts and graphs ✓
l) Collect and record discrete data and organise and represent information in different ways
m) Find mean and range ✓
n) Use data to assess the likelihood of an outcome

Level 2

a) understand and use positive and negative numbers of any size in practical contexts ✓
b) carry out calculations with numbers of any size in practical contexts, to a given number of decimal places ✓
c) understand, use and calculate ratio and proportion, including problems involving scale
d) understand and use equivalences between fractions, decimals and percentages ✓
e) understand and use simple formulae and equations involving one or two operations
f) recognise and use 2D representations of 3D objects
g) find area, perimeter and volume of common shapes
h) use, convert and calculate using metric and, where appropriate, imperial measures
i) collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate
j) use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate. ✓
k) use statistical methods to investigate situations
l) use probability to assess the likelihood of an outcome

References: Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.*
http://www.ofqual.gov.uk/files/2009-11-functional-skills-criteria-for-mathematics.pdf
This resource also covers many **adult numeracy curriculum** elements.
http://www.excellencegateway.org.uk/content/etf1075

Interpreting Infographics - Halloween spending
Answers and curriculum mapping

Entry 3

1. How many zombie costumes were sold on Ebay in **one** week? 2000 x 7 = 14,000
2. List the Halloween items (Food, Clothes, Decorations, Entertainment & stationery) in order of money spent over the past three years (2013-2015). Start with the largest amount.
   Clothing then Food then Decorations then Entertainment and stationery
3. In 2014, how much more was spent on clothing than in the previous year? £148m - £140m = £8m
4. What do you notice about these two percentages that are mentioned in the infographic? **28% 56%**
   Accept any of: both are even numbers, 56 is double 28, both are in the 7 times tables.

5a. The spending on Entertainment & stationery from 2013 to 2015 was £65m, £70m, £75m. If it continues to follow this pattern, what will spending be in 2016?
Increases by £5 million per year. So 2016 would be £75m + 5 = £80m

5b. Look at the spending on Halloween decorations from 2013 to 2015. Is there a pattern?
Also increases by £5 m per year. (87 to 92 to 97).

Level 1

6. Which type of pumpkin will have the largest sales in 2015? Circle the correct answer and explain why you chose it. a) Tiny munchkin b) Pimply superfreak c) Can't tell from the information given.
No values given, simply increases in sales. Although pimply sales increased more (56%) than munchkins (28%) there is no mention of what sales were in previous year so you can't tell which had the largest sales.
7. How much in total was spent on Halloween in **2014**? £132m + £148m + £92m + £70m = £442m
8. Write out the spending on food in 2014 using only the £ sign and digits. £132 000 000 (accept £132,000,000)
9. Without a calendar, work out what day of the week Halloween will be in 2016? TIP: 2016 is a leap year.
It will be a Monday. If 2016 was not a leap year it would be a Sunday. The day of the week for a given date moves forward by one day – except in a leap year when it moves forward by 2 days (unless the date is before Feb 28)
10. Assuming the forecasted spend for 2015 is correct, calculate the mean average spending per year on Halloween clothing (from 2013-2015).
(155m + 148m + 140m) ÷ 3 = 443m ÷ 3 = 147.6666667m rounds to £148m (£148,000,000)
11. In 2014 40% of ASDA adult customers bought Halloween food.
Write 40% as a: a) fraction (40/100 simplifies to 4/10 simplifies to 2/5) b) decimal 0.4

Level 2

12 Change 56% to a fraction in the simplest possible form. 56% = 56/100 = 28/50 = 14/25
13. Compare the forecasted total spending in 2015 on the bar chart to the £460m stated on the infographic. Explain any differences.
From the bar chart total spending (forecast) = 134m + 155m + 97m + 75m = £461m.
The information at the top of the infographic has been rounded to the nearest 10 million £.
14. Britons are expected to spend £460m this year, a 4.1% increase on 2014. Use this information to calculate a) the total spend in 2014. The value in 2015 of £460m represents 104.1% of the value in 2014.
To find 100% (ie the value in 2014): 460 x 100/104.1 = 441.882805m = £441,882,805
b) the increase in £ from 2014 to 2015. 460,000,000 – 441,882,805 = £18,117,195
c) To check, add 441,882,805 and 18,117,195 to get back to the 2015 total of £460,000,000.
15. By what percentage did spending on Entertainment & stationery increase from 2013 to 2014?
Entertainment & stationery increased from £65m to £70m, an increase of £5m.
5/65 x 100 = 7.692307692 rounds to 7.7%