

# Meet Malcolm!



Malcolm isn't the most gifted wizard.

# Malcolm loves learning spells!

Malcolm is always very keen to learn new spells and he loves making potions.



However, there is a problem...



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**DANGER**

However, he has slowly been improving!  
Even if professor Snape doubts his  
Magical ability.





IDEA

Malcolm has an idea!

He wants to create a potion to  
turn Snape into a frog!





# WARNING ALL TEACHERS

- Malcolm's needs your help to create the potion.



Malcolm needs different amounts of insect legs for his potion to work correctly





# Frog Potion

- The potion requires 24 insect legs.
- Spiders (S) – 8 legs
- Lizards (L) – 4 legs
- Bats (B) – 2 legs
- How many ways can Malcolm make the tester potion?

# Examples:

- The tester potion requires 24 insect legs.
- Spiders (S) – 8 legs
- Lizards (L) – 4 legs
- Bats (B) – 2 legs

You could use 3 spiders as  $3 \times 8 = 24$

You could use 1 spider and 4 lizards as  $1 \times 8 + 4 \times 4 = 24$

You could use 12 bats as  $12 \times 2 = 24$

There are lots and lots of different combinations!

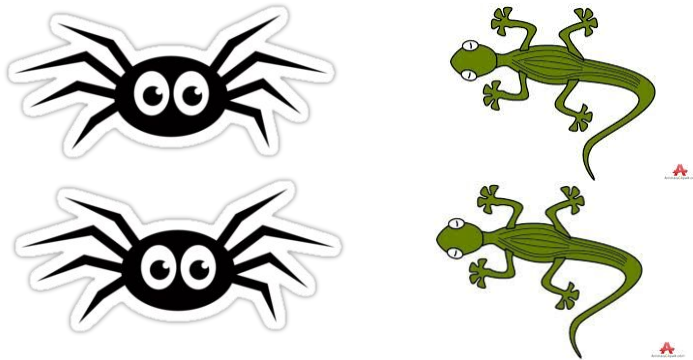
How many different combinations can you work out?

# Malcolm needs your help

- Your task is to find all the possible solutions for making the potion and record all the information and calculations needed to make the potion.
- Think carefully about a logical approach to this task!
- You may want to draw the insects to help you to visualise it e.g

# Malcolm needs your help

- You may want to draw the insects to help you to visualise it e.g



$$2 \times S = 16 \text{ legs}$$

$$2 \times L = 8 \text{ legs}$$

$$16 + 8 = 24 \text{ legs}$$

# Rat Potion Challenge

□ Rat Potion needs 68 legs!

Spiders (S) – 8 legs

Lizards (L) – 4 legs

Bats (B) – 2 legs

□ Using the same ingredients can you find the combinations to create a Rat potion?

# Plenary

- How many ways of finding the potion did you make?
- What patterns did you find to help with your working?