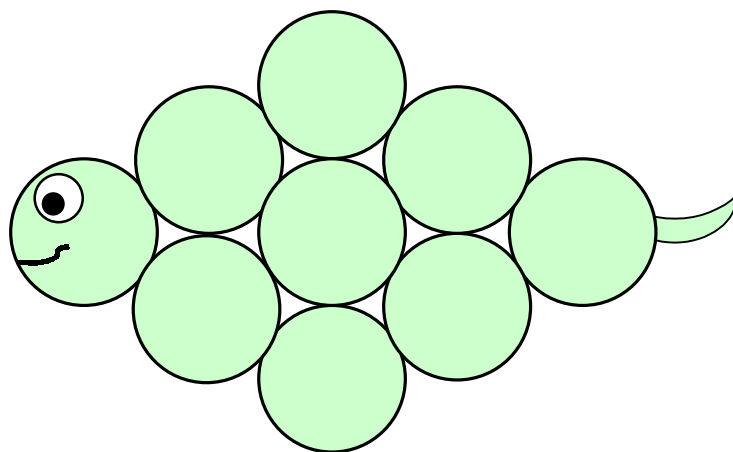




INVESTIGATION



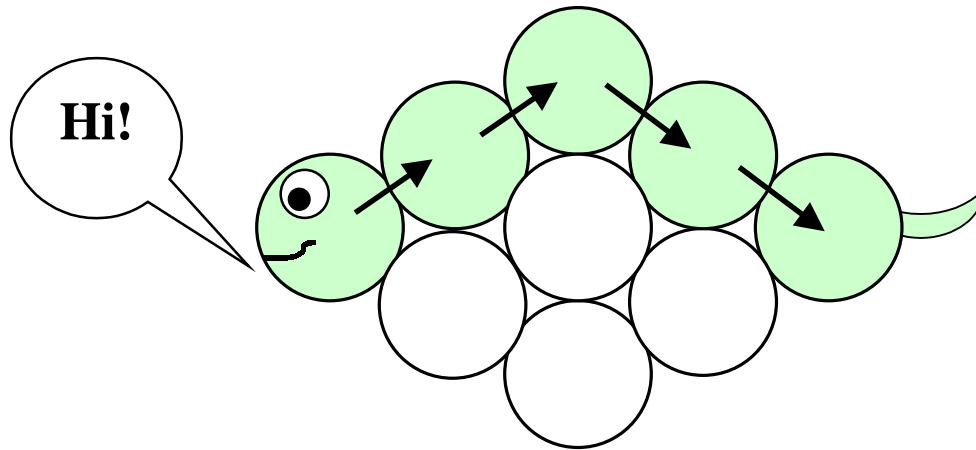
Caterpillar



MathSphere

Caterpillar Investigation

The Problem



Meet Colin Caterpillar.

I started at the head and coloured the circles until I reached the tail.

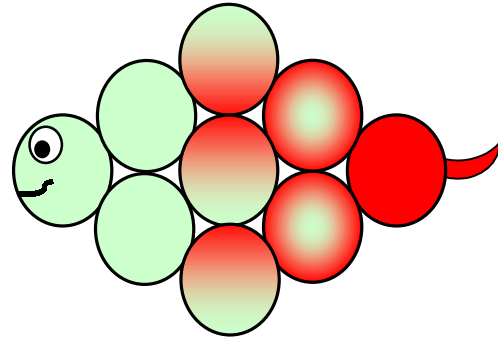
How many circles did I colour?

Can you find another route from the head to the tail that uses 5 circles?

How many different routes can you find that use 5 circles?

Some Ideas

Hello again. I've
been eating
redcurrants!
Does it show?



Can you find a longer caterpillar than 5 circles?

What is the longest caterpillar that you can make?

How do you know it is the longest possible?

Can you find a shorter caterpillar than 5 circles?

What is the shortest caterpillar you can make?

How do you know it is the shortest possible?

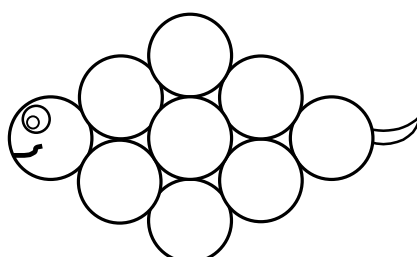
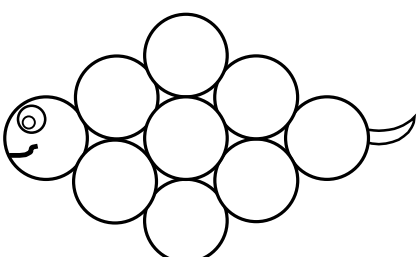
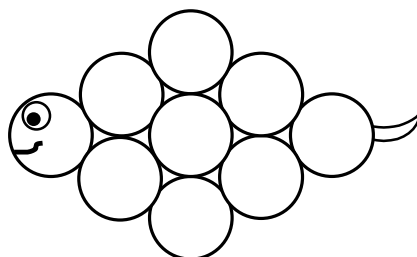
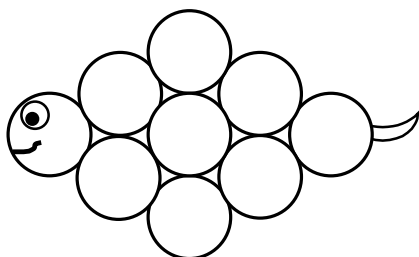
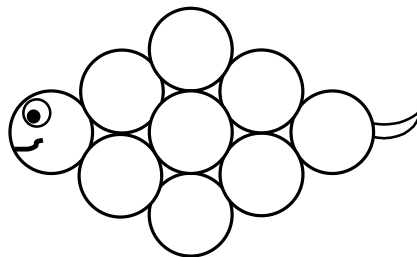
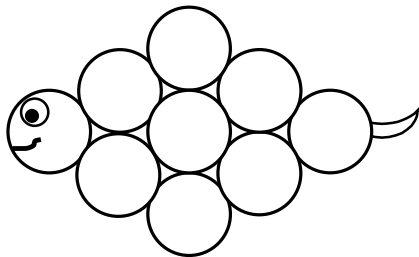
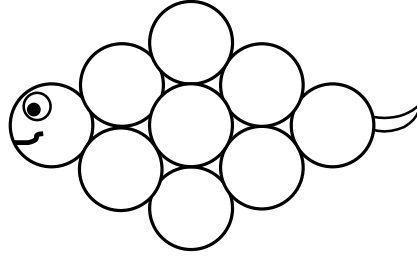
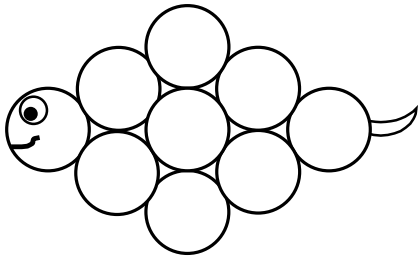
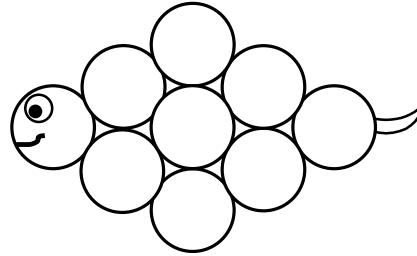
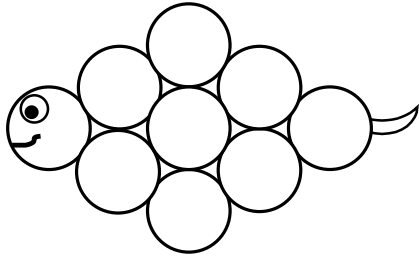
Extension:

What would happen if the head is placed in a different circle?

What would happen if the tail is placed in a different circle?

Can you make a different starting shape and see what happens?

Caterpillar Investigation



Answer Guide

Here are some notes for guidance.

This investigation is aimed at younger children, probably years one or two, although it can be used with older children to explore all possible combinations and reflections.

Useful resources:

Nine large circles cut out of card.

Photocopied sheets of blank caterpillars (see above page).

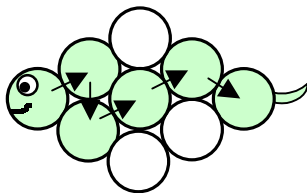
Coloured pencils or crayons.

Large 0 - 9 number cards.

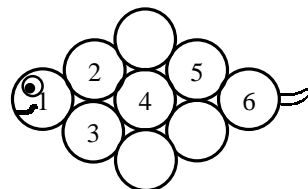
Smaller circular cards joined by split pins.

Ways of recording:

Children could colour or number the different routes: eg 6 circle routes:



or



Encourage:

Working in a systematic way - counting up to 9.

Checking to see that the same route has not been repeated.

Exploring what would happen if the head and tail were placed in different positions.