

# Medway UTC Engineering Habits of Mind

Visualising

Improving

Problem  
Finding

Systems  
Thinking

Adapting

Creative  
Problem  
Solving

Reflective

Resilient

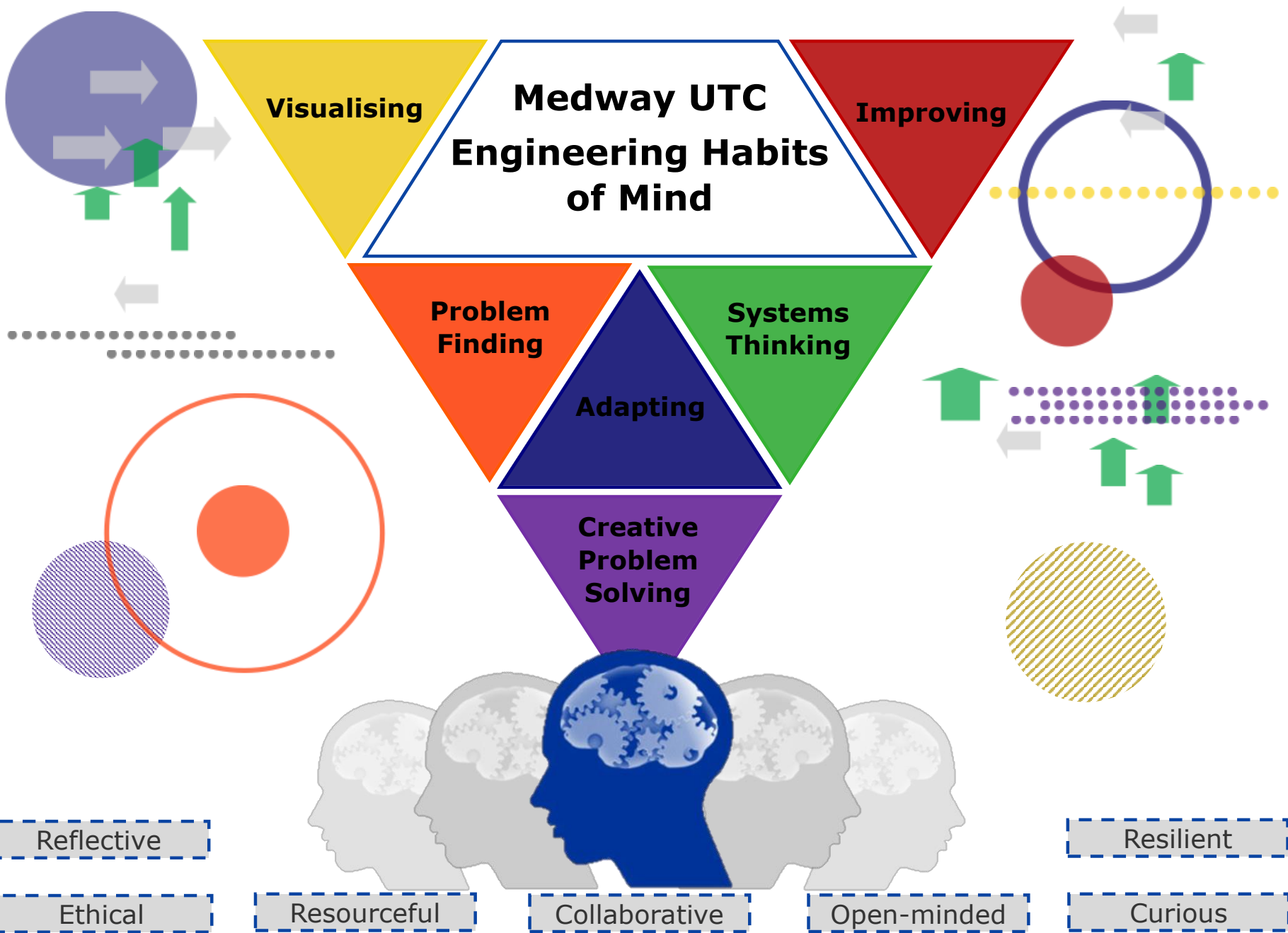
Ethical

Resourceful

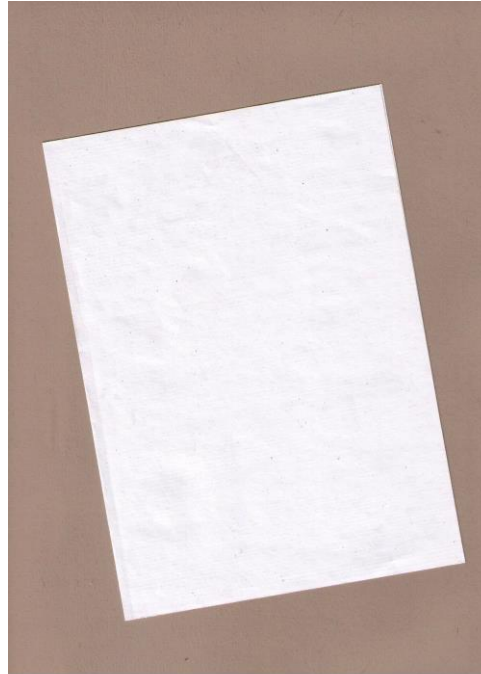
Collaborative

Open-minded

Curious

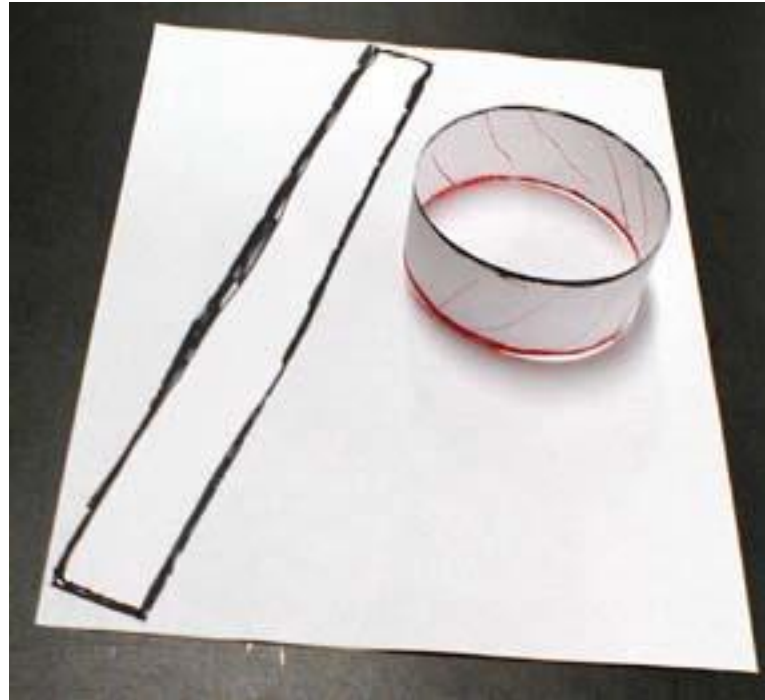


How many sides and how many edges  
does a piece of paper have?



Defining the problem  
= problem finding

How many sides and how many edges  
does a loop of paper have?



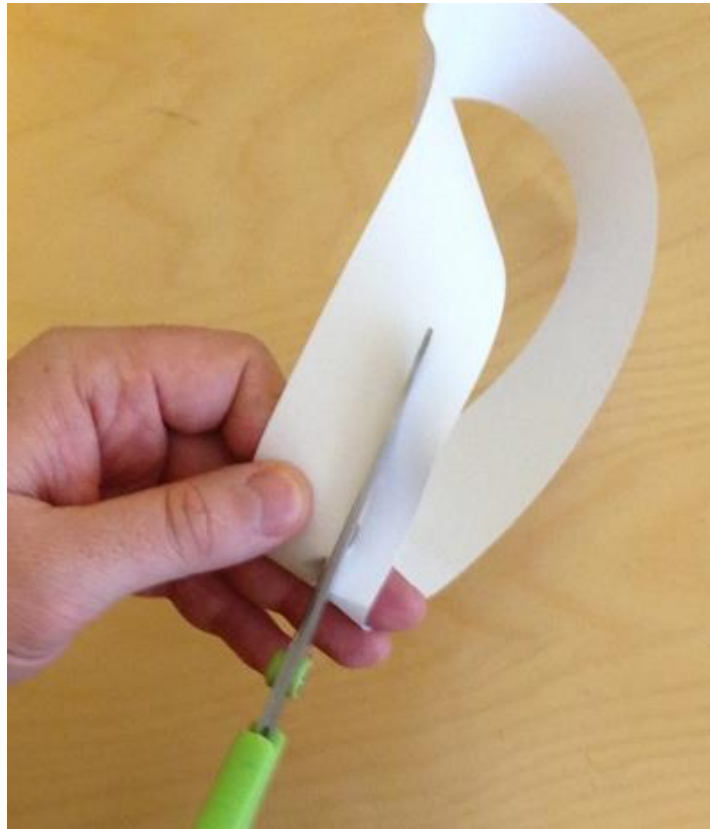
Turning abstract ideas into concrete  
= visualising

# This is a Mobius Strip

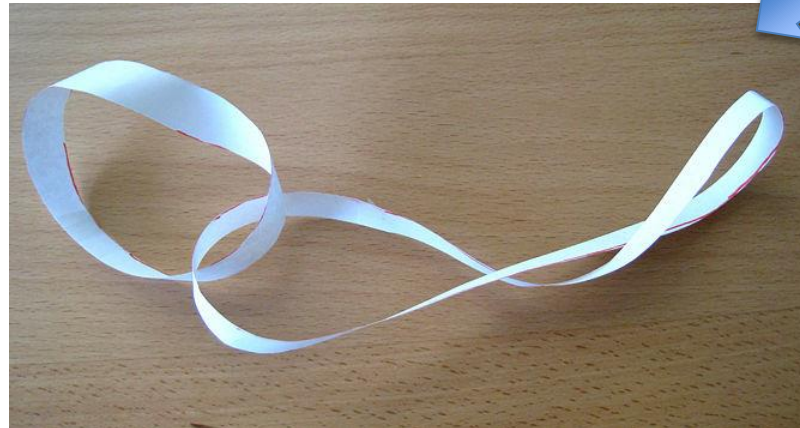
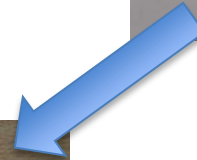
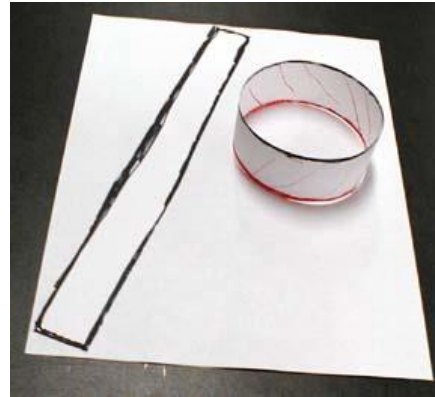
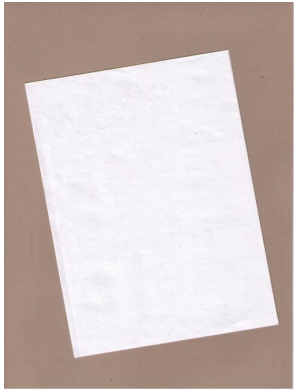


**It only has one side and one edge!**

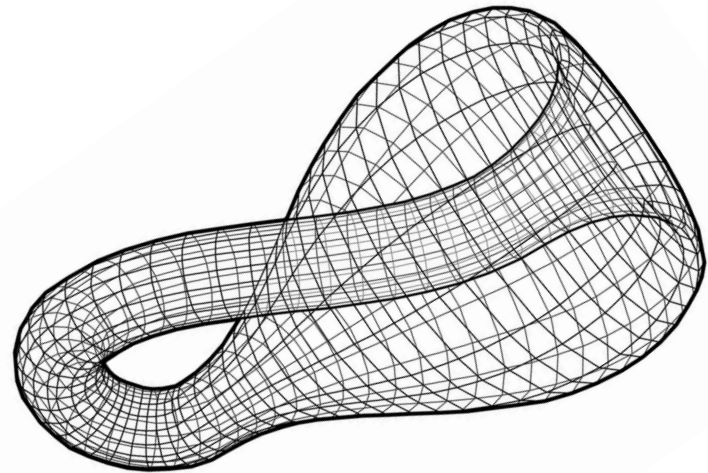
What would you end up with if you cut all the way around a Mobius strip, staying one third of the way in from the right side?



# Understanding different parts and building up a picture of how the interconnect is **SYSTEMS THINKING**



# What happens when you join things together?



Joining two Möbius strips creates a 3D shape with only one surface - it's called a Klein bottle

# Key Points of Systems Thinking

1. Everything is connected to everything else
2. You can never do just one thing
3. Changing from "either/or" thinking to "both/and"
4. There is no "away" to throw things to
5. The map is not the territory



# To reflect on...

## 'No Man is an Island' by John Donne

**No man is an island entire of itself; every man is a piece of the continent, a part of the main; if a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as any manner of thy friends or of thine own were; any man's death diminishes me, because I am involved in mankind. And therefore never send to know for whom the bell tolls; it tolls for thee.**