

The purpose of the inventors workshop is to allow your members to create something new, novel and unique - a new invention.

Through the exploration of the themed programme elements related to STEM your members will have noticed that inventions and technologies are created by applying knowledge and science to a problem.

Your members now process a quantity of knowledge that can be applied to many problems and create a new tool, device or machine to make it easier for humans to do a task.

This exercise is best undertaken a number of weeks after your members have engaged with the themed programme resources.

# Creativity

Creativity is the process of connecting apparently unrelated items together to create something new.

Generally, when looking to create new ideas we engage in a brainstorming exercise. Think of ideas and place them on a board, or sheet of paper. The 'Post it' method used in the programme cycle is a good example.

Another good example is the 'Spider Chart or Map' - which seeks to map out ideas and connect them together. Again we use this to good effect when planning programmes.

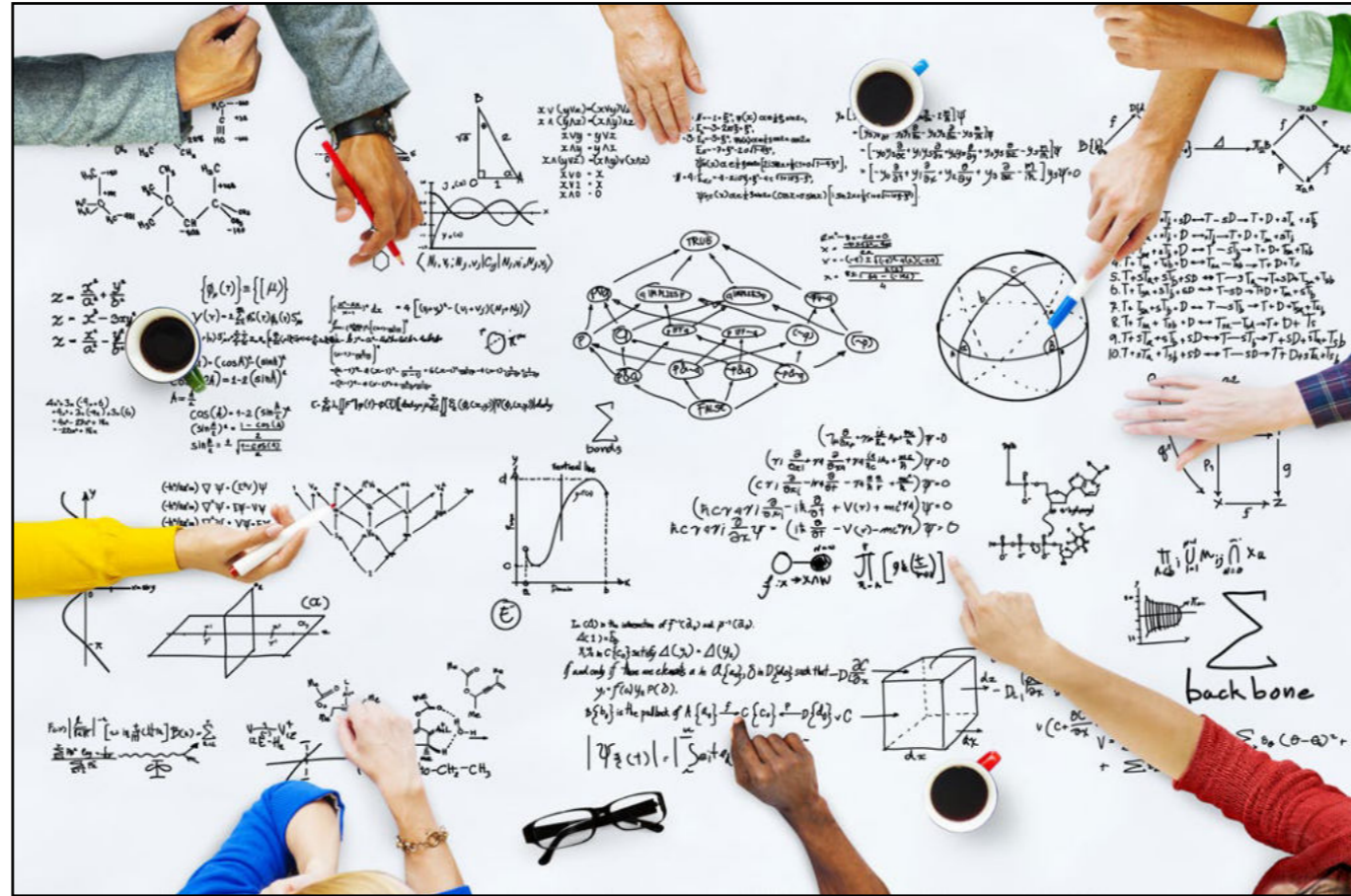
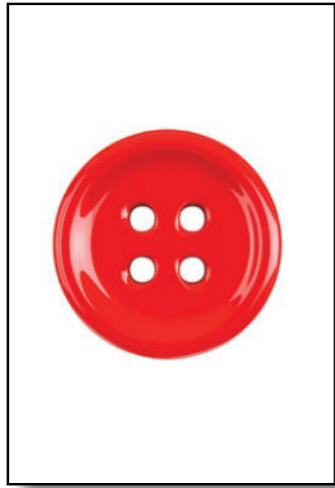
**Connect cards** - part of the inventor Workshop Kit, are another way to create ideas but they also require the use of imagination and a little bit of wild or mad thinking. Connect cards are used by many people working creative workspaces and also by inventors.

This is how they work - you have a problem or a mission - lets say to invent something that has a gardening connection.

Now select 2 or 3 connect cards at random from the pile. Each card has an image on it. The image may appear to be random but in fact the image can have many different uses or interpretations. For example the image of a match box can be related to 'opening', fire, seeing in the dark, a small container, matching thing together etc. it can have many different relationships. So, spend a few minutes thinking about the matchbox. In our example we have selected three cards - a button, a matchbox and a necklace. Our mission is to come up with an invention related to gardening that will have connections to these three things.

We might suggest an idea for gardening related to the button - a planting arrangement tool for laying out a flowerbed - like a very big button but with more holes so you know where to place the plants. The necklace might suggest a bird feeding tool or a seed planting tool in which you place a string in the ground and all the seeds are correctly spaced out.

So the connect cards connect different parts of our brains and create new pathways of thinking and connecting. You can make it



## How it works

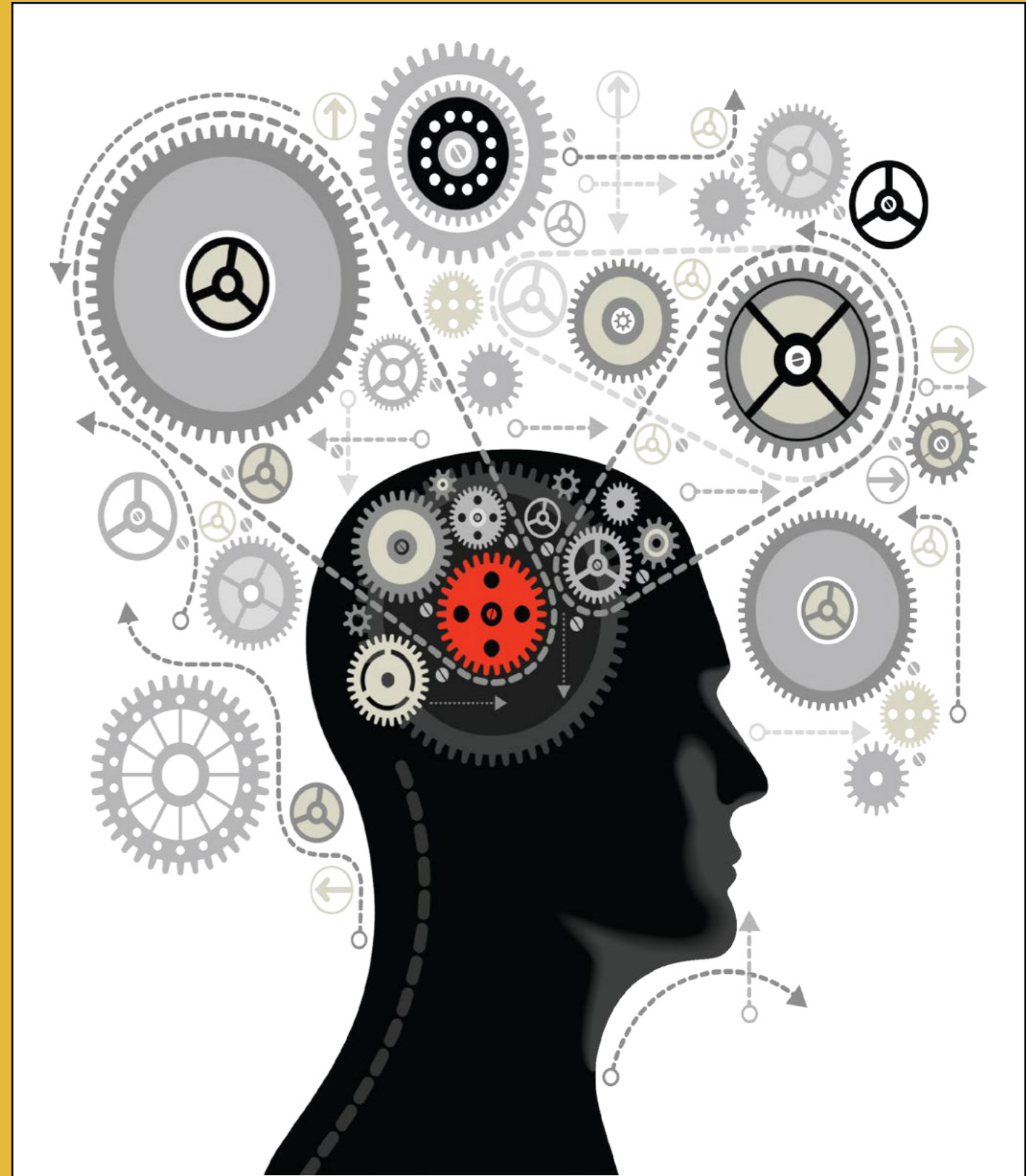
The Section is made aware of the inventor workshop material and it is planned into the programme cycle of the Section. Team Leaders are briefed as to the process and methods that will be used to create their invention. Scouts are available to assist as the workshop progresses.

The Inventor Workshop materials and documents will need to be printed off and available to all Teams in the Section. A collection of materials will also be required to enable each team to make a prototype of their invention. General craft materials, construction toys - Lego, Mecanno etc., bits and pieces. The object here is to have a pool of things that can be used to make a prototype. It does not have to have every item required, Teams will be expected to be creative with what is available.

Each Team should also be supplied with a simple (Euroshop) notebook - a special cover sticker can be downloaded and placed on the cover.

The purpose of the notebook is to record all the steps in the process and any modifications and outcomes of tests. This ensures no knowledge is lost and helps with the development and refinements of the design as it moves to final stages.

The exercise can be complete in one meeting but it would be tight - time wise. It is perhaps better as a two meeting event or a day long or a morning or afternoon session. The thinking of ideas and fine tuning the design takes time. Building the prototype also requires some time. The best results for both the design and the whole team based process is to allow enough time for the Teams to work together and realise their idea. This exercise could also be coupled with Team Meetings where the Team work together between formal meetings of the Section.



# INVENTORS WORKSHOP

**The task is to invent something new.**

**Options are:-**  
 Improve an existing tool/device/machine  
 Invent a new tool  
 Invent a new device  
 Invent a new machine

**Mission**  
 A tool/device or machine related to gardening

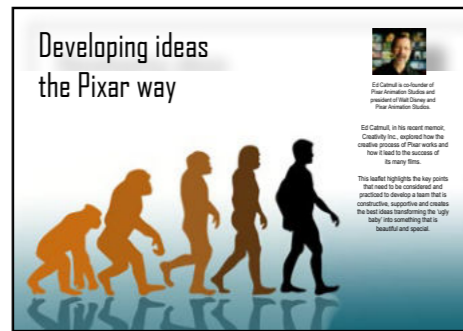
Already invented - A lawn mower

**INVENTORS**

Mission cards



Connect cards



Developing ideas the Pixar way



Howtoons - Seeing the future - visual communications



Howtoons - Playground - Idea to reality

The exercise is comprised of a number of steps. All the items that are required are contained in the 'Inventors Workshop Kit'

Each step is supported by various resources

**Mission Cards** - these cards present a number of areas that require new inventions

**Connect Cards** - this is a collection of image cards to support the thinking and brainstorming exercise

**Developing ideas the Pixar way** - a successful method that is used by Pixar Studios to develop and give value to ideas

**Our Invention Grid paper** - for drawing up your idea

**Howtoons - Seeing the future - visual communications**

**Howtoons - Playground - Idea to reality**

**Inventor Notebook cover sticker**

Our Invention Grid paper

**OUR INVENTION**

Team  
 Description

Date



### Step 1 - Consider the problem and brainstorm for ideas

Team Leaders are asked to pick one of the problem cards. The team must then brainstorm for ideas. To help this process the team can use cards from the **Connect Cards** pile - each member can pick two or three cards. The **Connect Cards** are image cards. The Scout must try to think of an idea that would connect the images to an invention that solves the problem. The thinking process can be wide and creative. The Team can also exchange **Connect Cards** and use them to expand any idea from the team.

The Team may also use 'Post its', notebooks or any other devices they wish to come up with ideas for inventions.

Ideally, the Team should have a number of possible ideas at the end of this period of investigation.

### Plan, Do Review

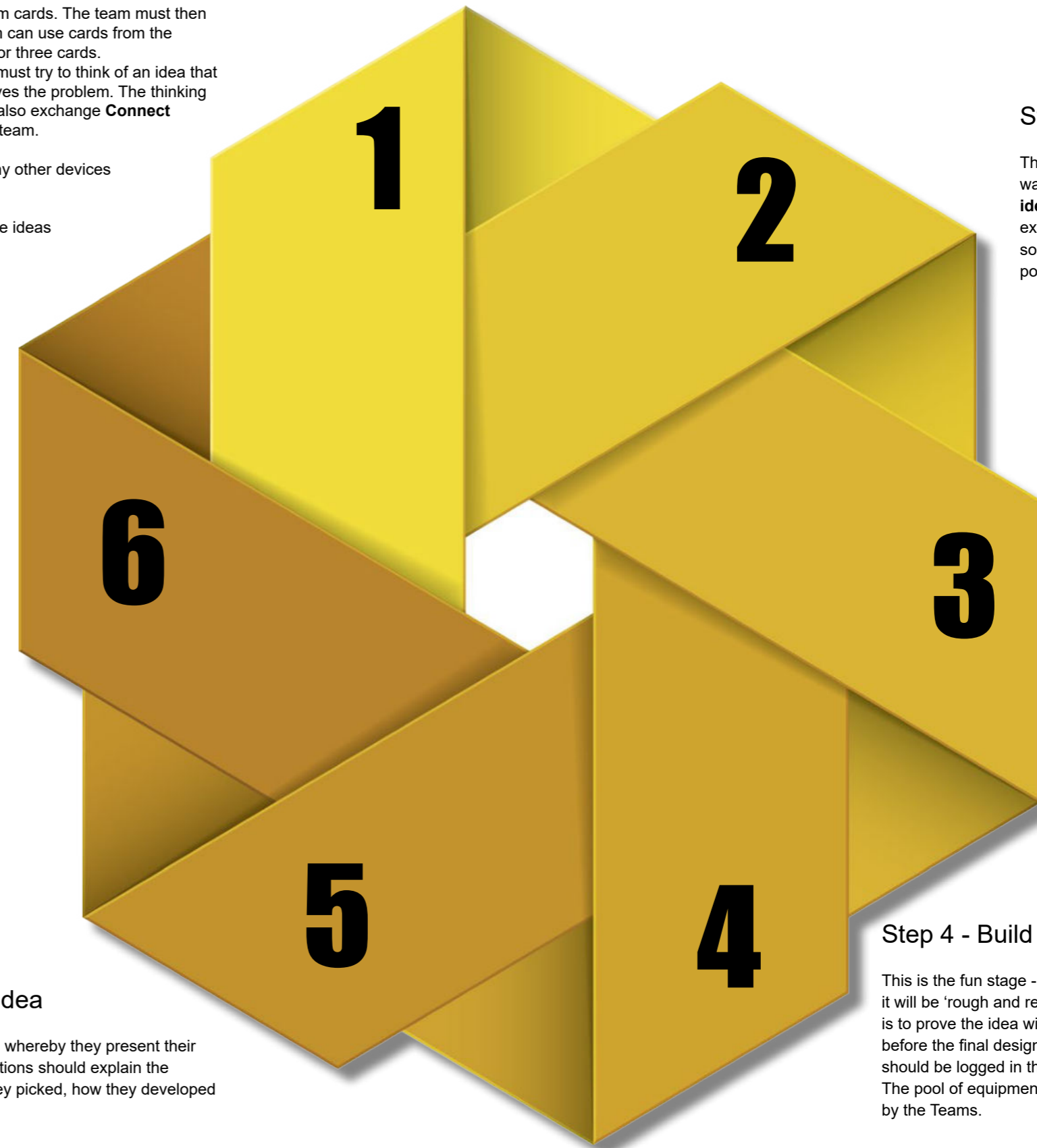
As with all Scout programmes the process of plan, do, review should be followed. In the reviewing section their should be a focus on the whole invention process and how the team interacted to develop their invention. In essence this is a team based exercise that requires discussion, listening, problem solving, leadership, teamwork. So, it provides a good opportunity to explore and examine how the teams work and interact together.

For older Sections it is also worth considering how this process reflects what happens in a work environment and how scouting skills and our team based system provides great training experiences for future work lives.

### Step 5 - Present your idea

Each Team are given a time period whereby they present their ideas to the Section. This presentations should explain the invention process - the problem they picked, how they developed ideas, and made their prototype.

# The Invention Process



### Step 2 - Develop suitable ideas

The Team now consider the likely ideas in a constructive way using the pointers suggested in the '**Developing ideas the Pixar way**'. This is a process of constructive examination of each idea - adding value and tweaks so that the final selected idea is well formed and has a possibility of success.

### Step 3 - Draw up your invention

Next stage is to create a visual/drawing/sketch of the team invention. This should include notes to explain features. Anyone looking at the drawing should have a good idea of the proposal. Scouters can assist to ensure all points are presented and covered

### Step 4 - Build a prototype

This is the fun stage - building the prototype. It is important to point out that it will be 'rough and ready' rather than a finished masterpiece. The prototype is to prove the idea will work. Testing, modifications etc will be required before the final design is finished and these modifications and outcomes should be logged in the inventors notebook. The pool of equipment is provided for that purpose and it can be added to by the Teams.