

# Garden at Beacon Hill Community School

## Design Process: SADIMET

### Survey/observe

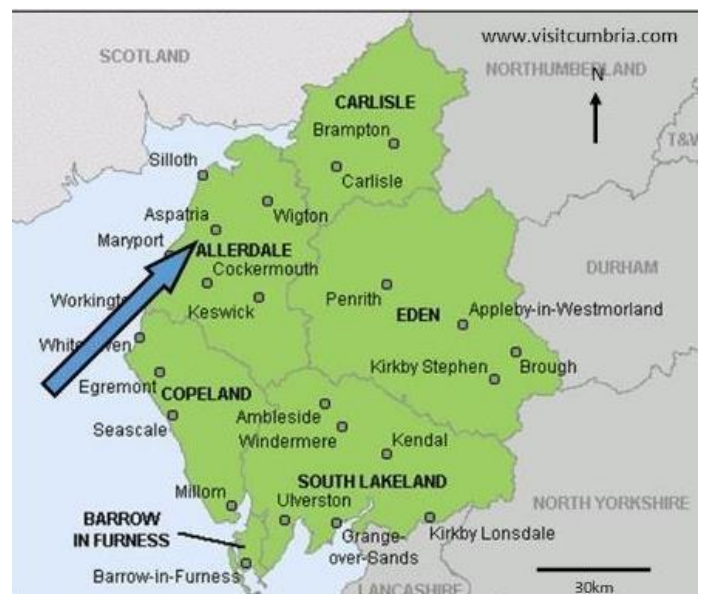
- The land:  
Location in UK.



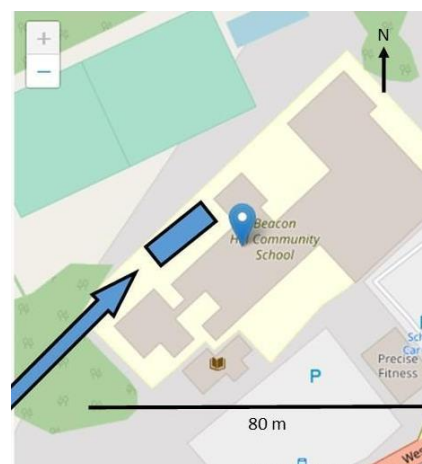
Location in Aspatria



### Location in Cumbria



Location on School Site





The pupils completed a questionnaire / worksheet with their teacher and identified:

- Cumbria is in the North West of England.
- Next to Cumbria is the Solway (the sea).
- Scotland is across the Solway.
- There are lots of mountains and lakes in the centre of Cumbria.
- From the top floor of the school, we can see Skiddaw to the south east.
- January and February are the coldest months.
- August is the hottest.
- October, November and December are the wettest months.
- April is the driest.

Going out onto the “garden” space they could:

See	Hear	Touch
<ul style="list-style-type: none"> <li>● Buildings</li> <li>● Grass</li> <li>● Blackberry bushes</li> <li>● Concrete</li> <li>● Tree</li> </ul>	<ul style="list-style-type: none"> <li>● A Plane</li> <li>● Birds</li> <li>● Cars</li> <li>● Tractor</li> <li>● People speaking</li> <li>● Train</li> </ul>	<ul style="list-style-type: none"> <li>● Thorns</li> <li>● Wet grass</li> <li>● concrete</li> </ul>

Nearby are:

- Paths
- Steps
- Buildings
- Bushes

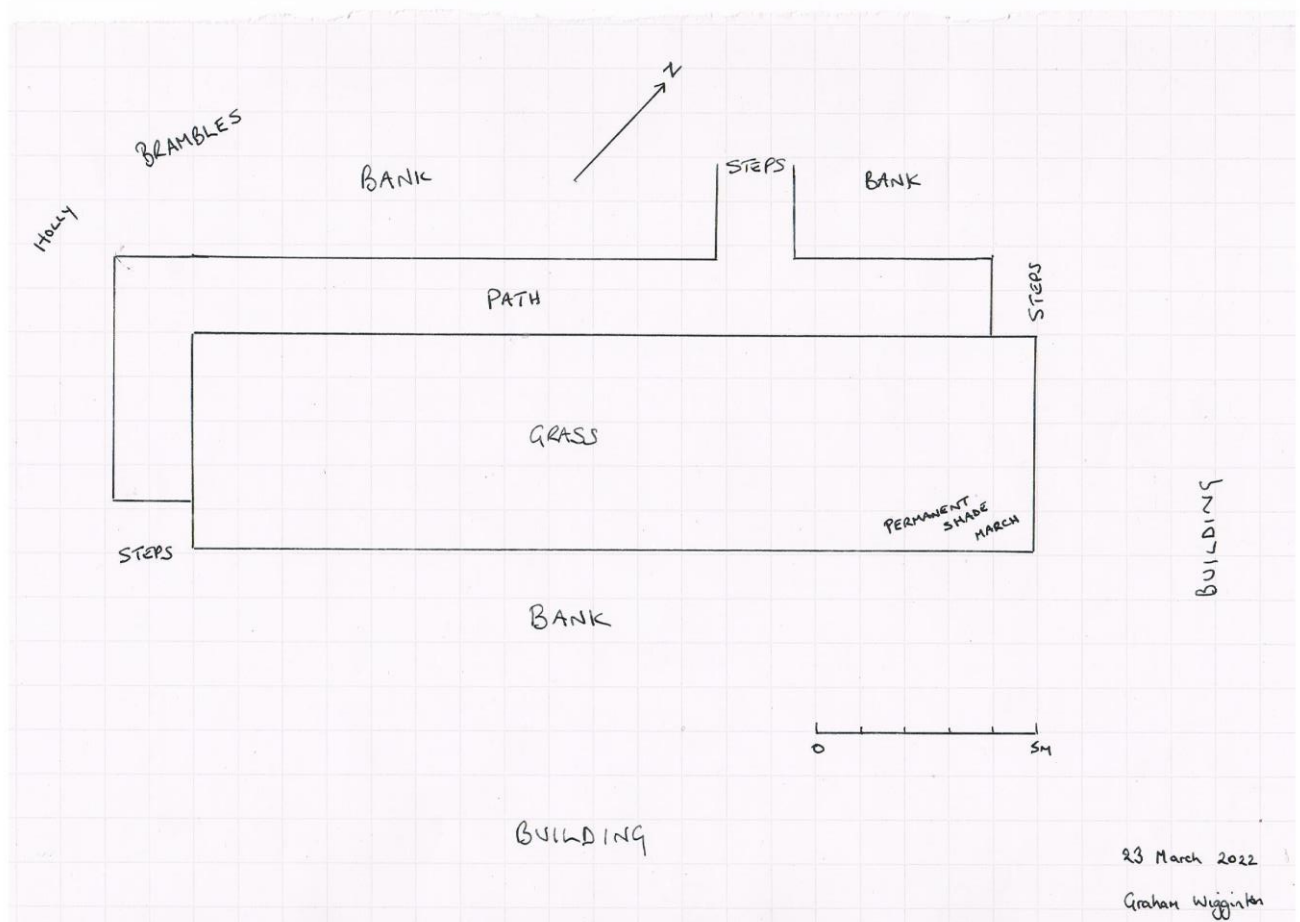
The “garden” space faces Northwest.

In springtime it will get sun from midday to sunset.

Living in the “garden” space are worms, insects, butterflies and birds

The “garden” space is 4.9 metres wide by 18.9 metres long with a 1.8 m wide path on the south west and north west sides. The path is made up of 0.6 x 0.9 m paving slabs that can be taken up.

Base Map

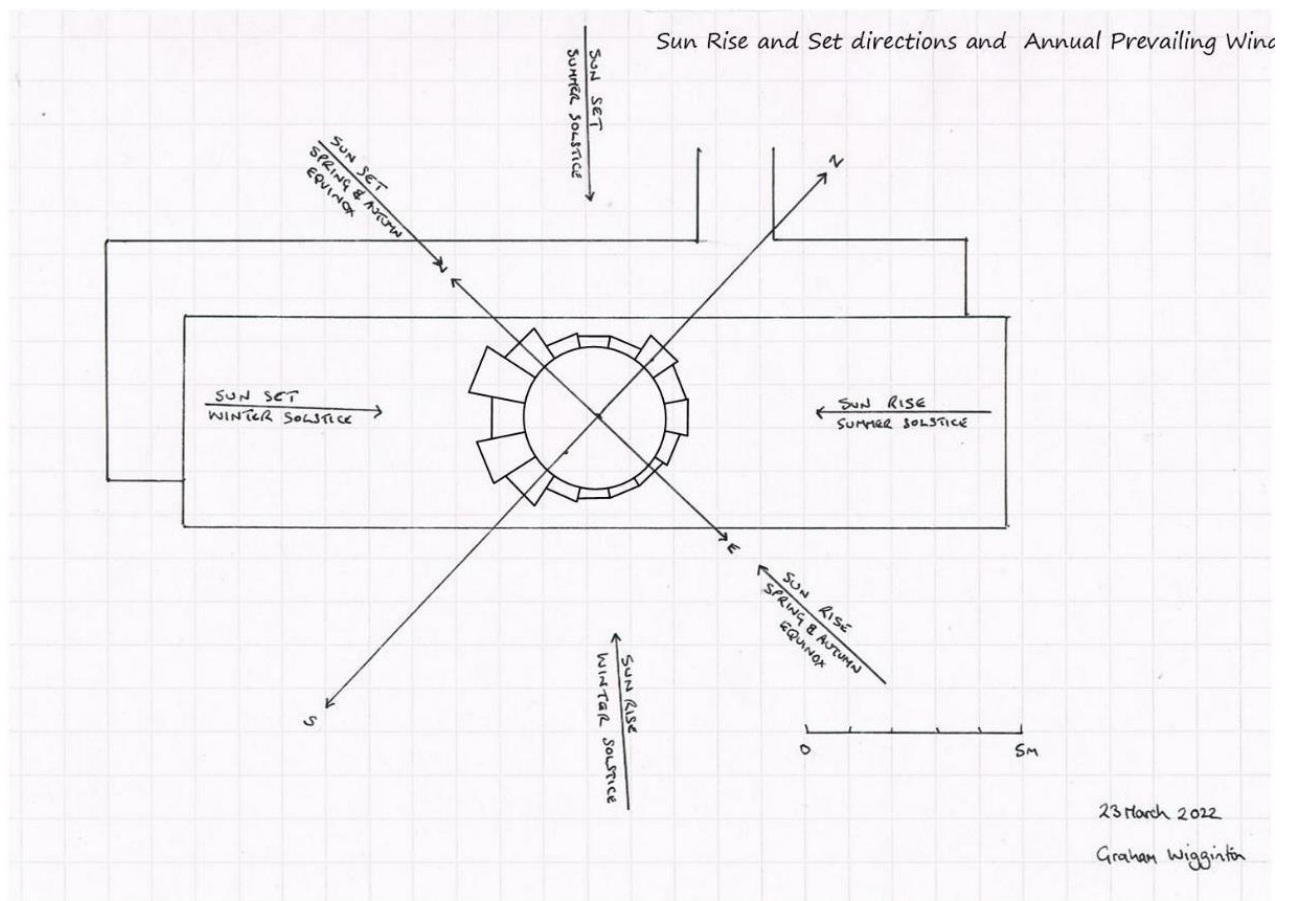




Sun rise and setting information from

<https://www.timeanddate.com/sun/uk/carlisle?month=3&year=2022>

	Sun Rise	Sun Set	Sun Altitude at Midday
Spring Equinox March 20 <sup>th</sup>	89° at 0614 GMT	271° at 1825 GMT	35°
Summer Solstice	45° at 0433 GMT	315° at 2153 GMT	59°
Autumn Equinox	89° at 0558 GMT	271° at 1808 GMT	35°
Winter Solstice	132° at 0834 GMT	228° at 1545 GMT	12°



- The pupils:  
Secondary Pupils Observation from Experience of Break time and lunchtime activities  
A Rationale for a garden space in a secondary school

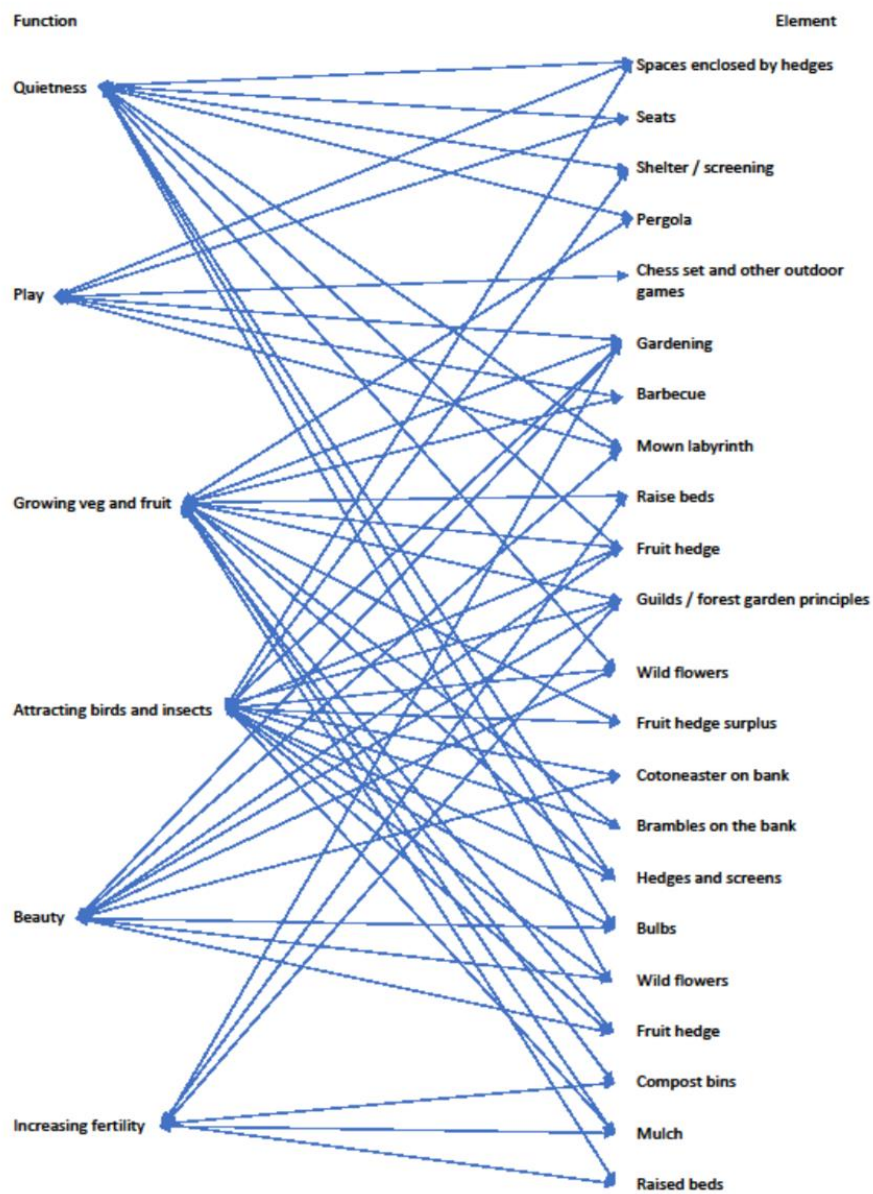
Physical <i>Includes fine and gross motor skills as well as senses</i>	Social-Emotional <i>How does the child interact with others?</i>	Cognitive	Language <i>Use of verbal and non-verbal language skills.</i>
Football Tennis Catch Chasing games (KS2) Outdoor gym (KS2) Dance routines Indoor sports - e.g., basketball	Chatting in groups Eating lunch together laps of the playground Sitting watching talking with staff	Board games Art club Homework Reading / library	Imaginary games (KS2) Chatting in groups Eating lunch together Talking with staff

There is a move within secondary schools to reduce free time in order to manage student's behaviour, this is partially driven by the need for teaching staff also to have a break, partially by the perception that negative behaviours do not have time to develop. More than half of a secondary school pupils' lunchtime is spent either queuing for lunch or eating lunch. As a consequence, there is a limit to the complexity of pupil activities. As such games tend to be less structured, for example a kickabout as opposed to an organised football match.

As is evident from what I recall of being out on the playground at break time and lunchtime the majority of activities are either social chat or a ball game of some sort, usually football. This provides a limited opportunity for pupils with special educational needs, in particular those with autism for whom ball games and social interaction are difficult, resulting, quite often, in their being alone at break time and lunchtime. The light touch of supervision at secondary school compared to primary school, can make the social interactions for pupils with severe learning difficulties complex for them. They can often be on the outside of social groups not being able to keep up with the pace of social interaction, as a consequence their contributions can sometimes be confused or inappropriate, and lead to upset for them and others. Given their cognitive and physical difficulties others need to accommodate them into their games, which they do with a great deal of empathy, but often the number of people involved in a game can be overwhelming for the people with special educational needs.

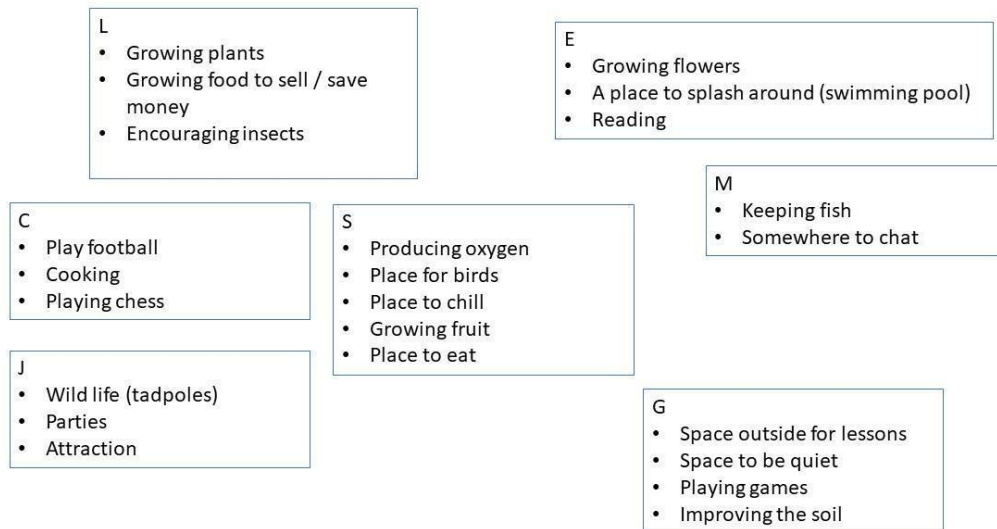
A garden can provide a series of "small rooms", or spaces where smaller games or social interactions can take place. This would mean that there would be a lower adult management of free time for these students.

As I was unable to meet with the pupils until Friday 18 March, I carried out a Function Elements Analysis based on what I would like the garden to be.



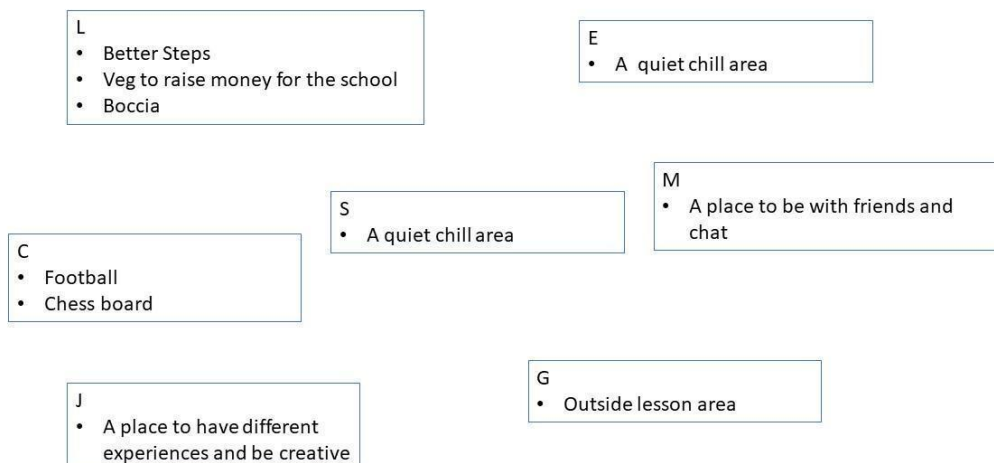
- When I met with them on 18 March, we looked at what functions they would see for a garden. L, S, E, M and C are the pupils, J and G the adults.

## Functions



We then had a dream circle and identified what their most wanted function would be.

## Dream Circle

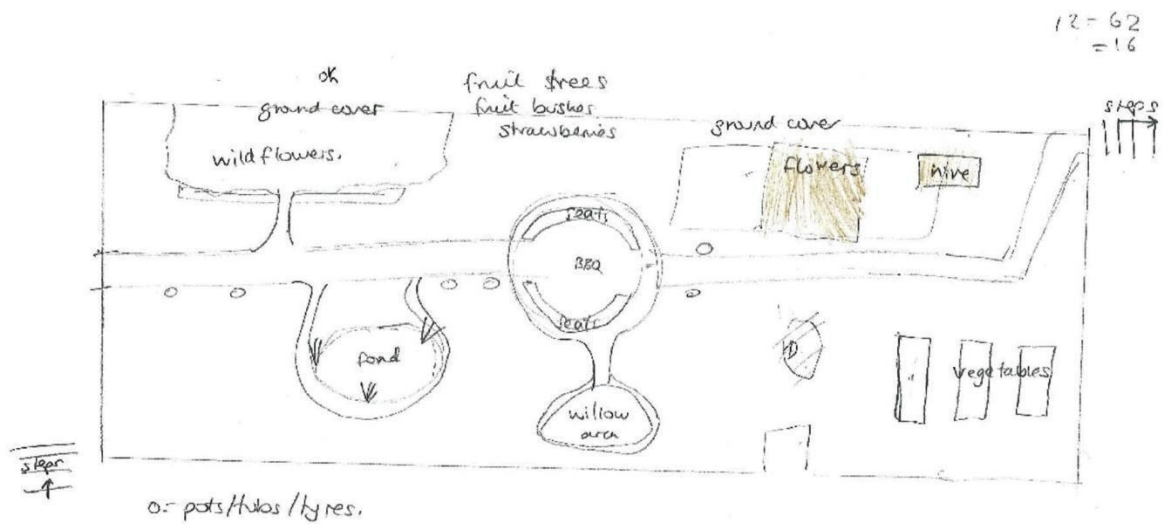


Both of these have correspondences and similarities to my own original thoughts.

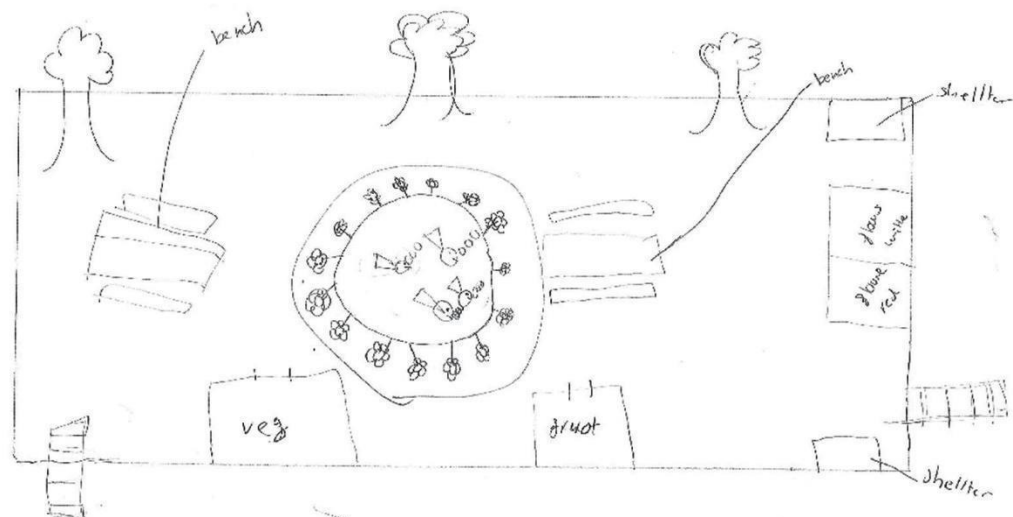
## Elements

Prior to my meeting up on 18 March the pupils had sketched out a number of garden ideas.

### C's ideas

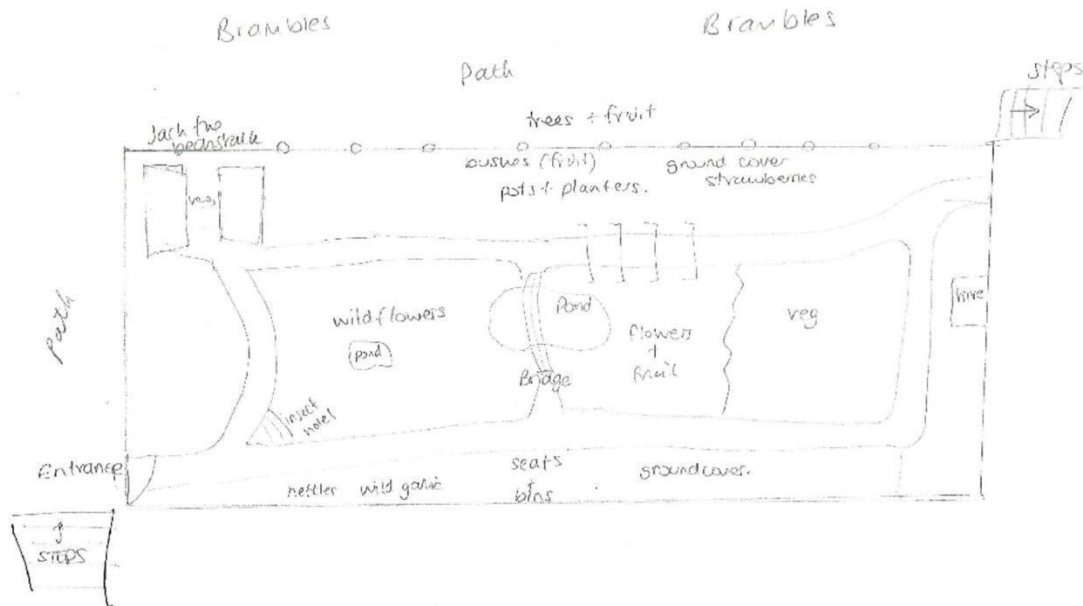


### M's ideas

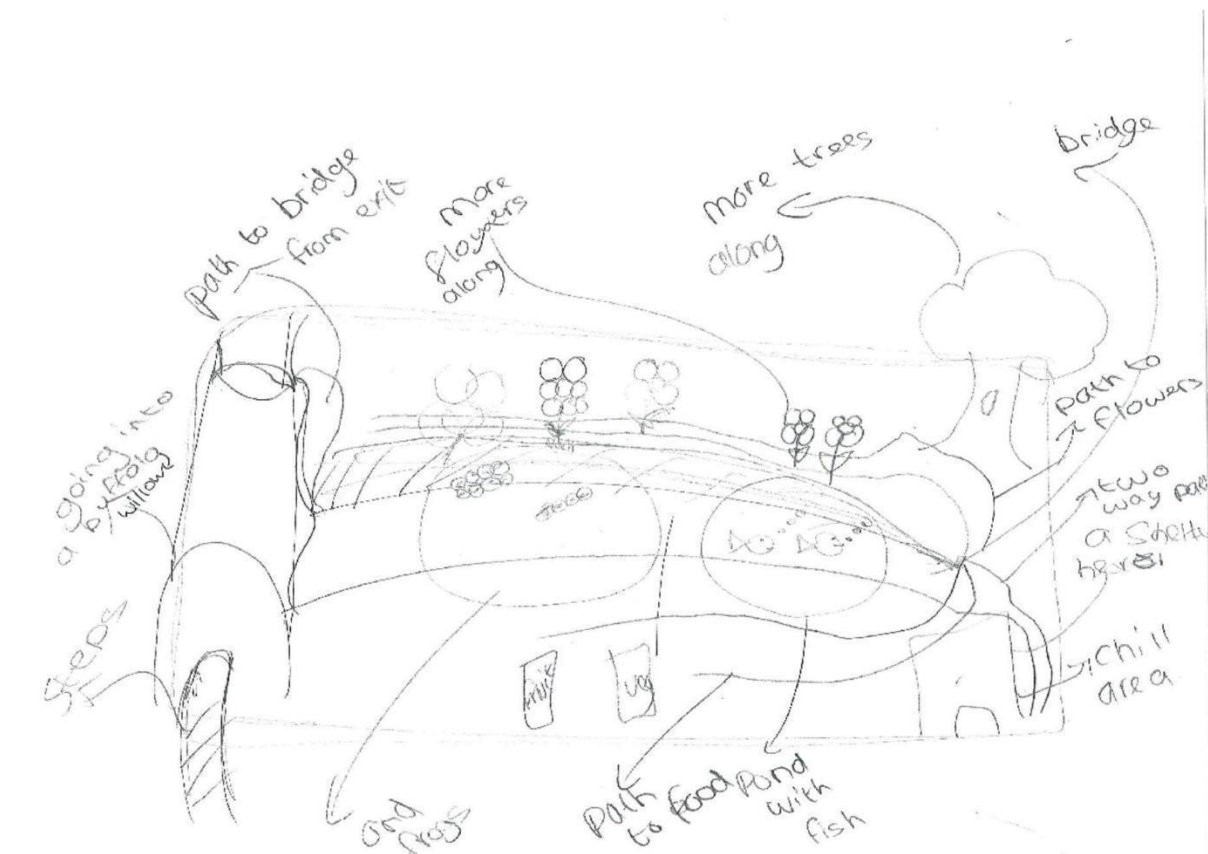




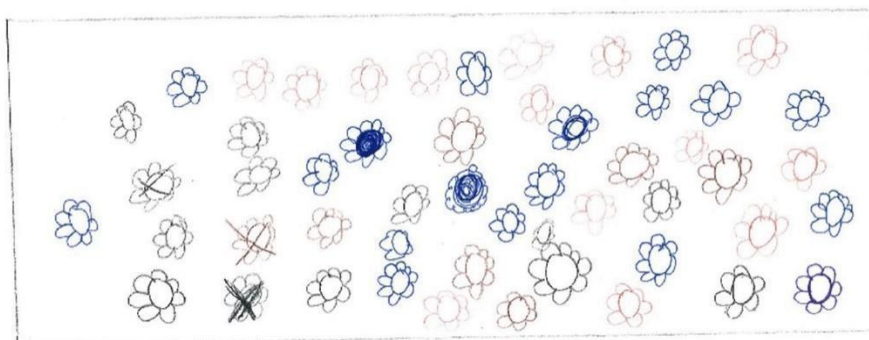
L's ideas



S's ideas



E's ideas



These are their main ideas, including the adults...

L	E	M	S	C	J	G
<ul style="list-style-type: none"> <li>• Bees</li> <li>• Bins</li> <li>• Bridge</li> <li>• Flowers</li> <li>• Fruit</li> </ul> Bushes Hotel <ul style="list-style-type: none"> <li>• Nettles</li> <li>• Pond</li> <li>• Pots and planters</li> <li>• Seats</li> <li>• Strawberry s</li> <li>• Vegetables</li> <li>• Wild flowers</li> <li>• Wild Garlic</li> </ul>	<ul style="list-style-type: none"> <li>• Flowers</li> </ul>	<ul style="list-style-type: none"> <li>• Bench</li> <li>• Fish</li> <li>• Fruit</li> <li>• Pond</li> <li>• Red flowers</li> <li>• Shelter</li> <li>• Vegetables</li> <li>• White flowers</li> </ul>	<ul style="list-style-type: none"> <li>• Bridge</li> <li>• Chill Area</li> <li>• Fish</li> <li>• Flowers</li> <li>• Frogs</li> <li>• Paths</li> <li>• Pond</li> <li>• Shelter</li> <li>• Trees</li> <li>• Willow</li> </ul>	<ul style="list-style-type: none"> <li>• BBQ</li> <li>• Bees</li> <li>• Flowers</li> <li>• Fruit bushes</li> <li>• Fruit Trees</li> <li>• Pond</li> <li>• Pots, tubs, tyres</li> <li>• Seats</li> <li>• Strawberry s</li> <li>• Vegetables</li> <li>• Wild flowers</li> <li>• Willow Arch</li> </ul>	<ul style="list-style-type: none"> <li>• Baskets</li> <li>• Bat box</li> <li>• BBQ</li> <li>• Bee Hive</li> <li>• Bird Box</li> <li>• Bulbs</li> <li>• Compost</li> <li>• Fruit bushes</li> <li>• Fruit trees</li> <li>• Pergola</li> <li>• Pond</li> <li>• Pots</li> <li>• Raised beds</li> <li>• Seats</li> <li>• Sensory plants</li> <li>• Shed</li> <li>• Tables</li> <li>• Wildlife planting</li> <li>• Willow</li> <li>• Wood pile</li> </ul>	<ul style="list-style-type: none"> <li>• Barbecue</li> <li>• Brambles on the bank</li> <li>• Bulbs</li> <li>• Chess set and other outdoor games</li> <li>• Compost bins</li> <li>• Cotoneaster on bank</li> <li>• Fruit hedge</li> <li>• Fruit hedge surplus</li> <li>• Gardening</li> <li>• Guilds / forest garden principles</li> <li>• Hedges and screens</li> <li>• Mown labyrinth</li> <li>• Mulch</li> <li>• Pergola</li> <li>• Raise beds</li> <li>• Seats</li> <li>• Shelter / screening</li> <li>• Spaces enclosed by hedges</li> <li>• Wild flowers</li> </ul>

These are the elements by order of mentions by the pupils.

Element	"Votes" by pupils
· Flowers	5
· Fruit bushes / trees	4
· Pond	4
· Bench / seats	3
· Vegetables	3
· Bees	2
· Bridge	2
· Fish	2
· Pots and planters	2
· Shelter	2
· Strawberries	2
· Wild flowers	2
· Willow structures	2
· BBQ	1
· Bins	1
· Chill Area	1
· Frogs	1
· Insect Hotel	1
· Nettles	1
· Paths	1
· Trees	1
· Wild Garlic	1

- The knowledge base/history
- The school once had been an agricultural college. There had been, 10 years ago, students doing ASDAN qualifications based around gardening and the school had a polytunnel in a paved area to the south west of the current site. There are a number of garden elements available, for example raised beds, compost tumbler, tyres and even a shed somewhere on site.

- The Head of Science is keen for the student to have the opportunity to grow vegetables as part of their Science curriculum and the Assistant Head is keen for the students to engage in outdoor activities that have a local focus.

## Analysis

The main functions identified by the group are:

1. To provide quiet spaces – somewhere to chill	People Care Fair Share
2. To provide opportunities to socialise – somewhere to chat	People Care Fair Share
3. To provide safe play / game area – somewhere to play chess, football, boccia.	People Care Fair Share
4. To provide food – somewhere to grow fruit and vegetables.	Earth Care People Care
5. To provide a space with beauty – somewhere to grow flowers.	Earth Care People Care
6. To encourage insects, birds and mammals – somewhere to grow wild flowers, somewhere to have homes for birds, insects and mammals.	Earth Care Fair Share
7. To provide space for learning – this is somewhere for all of the above.	Earth Care People Care Fair Share

Element	Positive	Negative	Interesting
· Flowers	Can be grown through the year. Provide beauty and calm, attracts insects and birds. Seeds can be cheap.	Bulbs could be costly.	Can be used for Science teaching.
· Fruit bushes / trees	Perennial. Could be grown from cuttings.	Trees slow to grow. Provide shade.	Could be used for cooking.
· Pond	Provides habitat.	Health and safety? Keeping full.	Provide a different habitat.
· Bench / seats	Needed for quiet and teaching areas.	Cost / materials. Building skills may be beyond some of the pupils.	
· Vegetables	Can be used in school. Teaching in Science.	Maintenance through the summer holidays will reduce choices.	Introduce pupils to new foods.



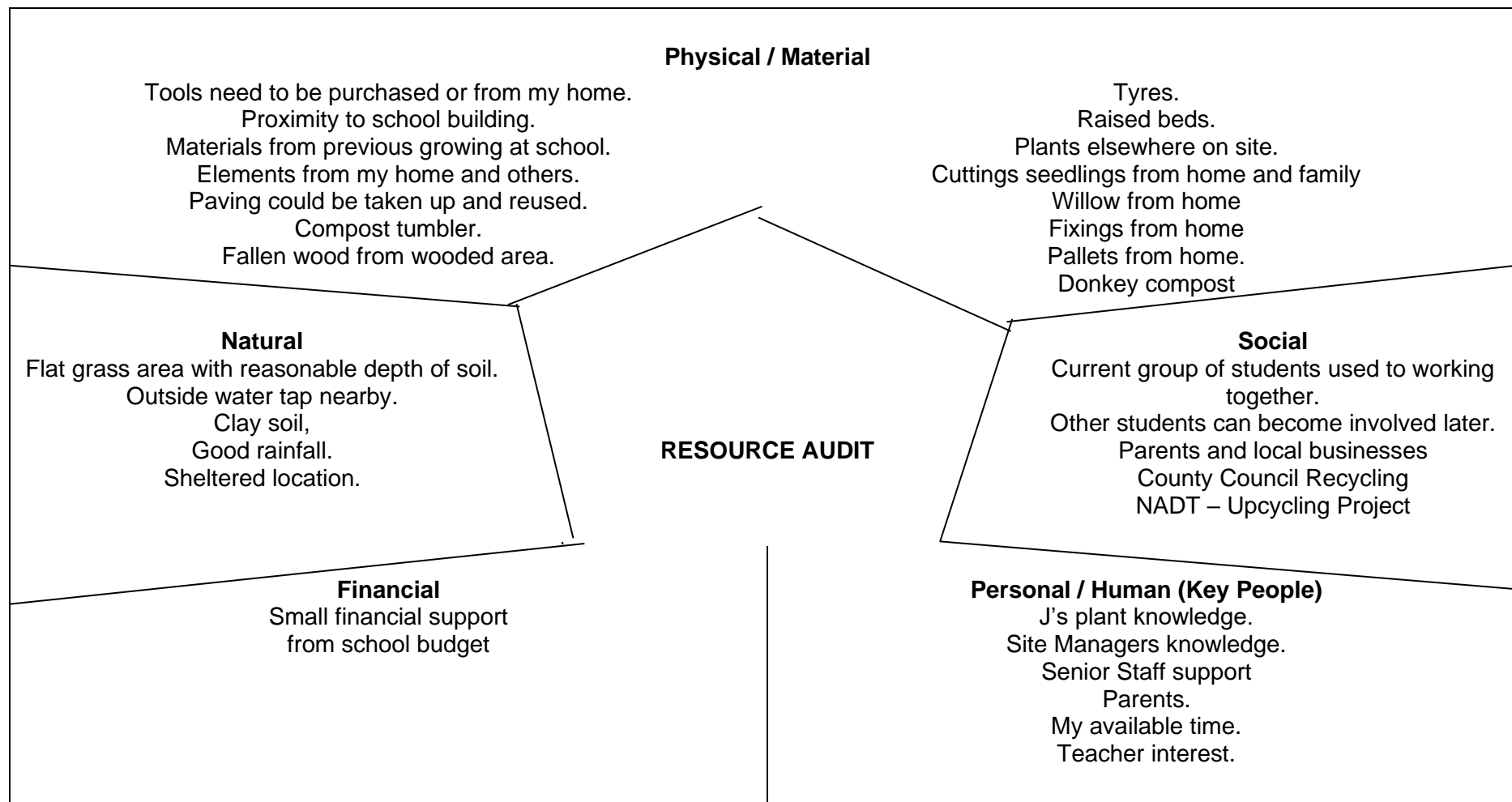
· Bees	Good for pollination.	Health and safety (anaphylaxis). Needs skilled beekeeper.	Honey!
· Bridge	Exciting feature to have and build.	Health and safety. Cost of materials.	Interesting project.
· Fish	Different species in the garden.	See pond. Digging hole deep enough.	
· Pots and planters	Can bring in the Cumbrian winter.	Needs watering, looking after in the holidays.	pupils could have individual planters to be responsible for.
· Shelter	It rains in Cumbria.	Cost?	
· Strawberries	Ground cover.		
· Wild flowers	Attracting insects and birds. Provide a peaceful area.	Will need to start with a small area.	
· Willow structures	Easy to grow. Willow will be free.	Need trimming annually.	Can learn skills or weaving and charcoal making.
· BBQ	Social focus.	Would need to be taken in when not in use.	Can learn cooking skills.
· Bins	Would keep the area tidy.	Would they be better outside the garden?	
· Chill Area	pupils need somewhere away from the hustle and bustle of lunch and break.	Needs to be managed in terms of numbers. Other students will want to use it.	pupils can decide how it is shared.
· Frogs	Learning the life cycle.	Need water.	
· Insect Hotel	Better option from Health and safety point of view than a bee hive. Can be easily made with recycled materials.		
· Nettles	Great for wildlife and compost.	Stings.	Learning the value of things considered negative in society.
· Paths	The ground could get boggy so paths will be needed.	Cost and physical labour of installing. Difficult to move once decided on.	
· Trees	Perennial. Could be grown from cuttings.	Trees slow to grow. Provide shade.	

	Habitat for animals and birds.	Could grow too large.	
· Wild Garlic	Perennial and can be used in cooking.	Aroma?	

Element/ Function	To provide quiet spaces – somewhere to chill	To provide opportunities to socialise – somewhere to chat	To provide safe play / game area – somewhere to play chess, football, boccia.	To provide food – somewhere to grow fruit and vegetables.	To provide a space with beauty – somewhere to grow flowers.	To encourage insects, birds and mammals – somewhere to grow wild flowers, somewhere to have homes for birds, insects and mammals.	To provide space for learning – this is somewhere for all of the above.
· Flowers	✓				✓	✓	✓
· Fruit bushes / trees	✓			✓	✓	✓	✓
· Pond	✓					✓	✓
· Bench / seats	✓	✓					✓
· Vegetables				✓		✓	✓
· Bees				✓	✓	✓	✓
· Bridge	✓	✓					
· Fish						✓	✓
· Pots and planters	✓			✓	✓	✓	✓
· Shelter	✓	✓	✓		✓		✓
· Strawberries				✓	✓	✓	✓
· Wild flowers	✓				✓	✓	✓
· Willow structures	✓	✓	✓		✓	✓	✓
· BBQ		✓					✓
· Bins							

· Chill Area	✓	✓			✓		✓
· Frogs						✓	✓
· Insect Hotel				✓		✓	✓
· Nettles						✓	✓
· Paths							
· Trees					✓	✓	✓
· Wild Garlic				✓		✓	✓
Additional Elements from J and G							
Bat Box						✓	✓
Bird Box						✓	✓
Compost				✓		✓	✓
Bulbs					✓	✓	✓
Pergola	✓	✓		✓	✓		✓
Raised beds				✓			✓
Sensory plants	✓	✓			✓	✓	✓
Woodpile						✓	✓
Chess set, Boccia			✓				✓
Labyrinth					✓		
Mulch						✓	

Resources:



## Limitations

Time within the curriculum.

Timing of the design with regard to the seasons and planting.

Cost needs to be kept to a minimum.

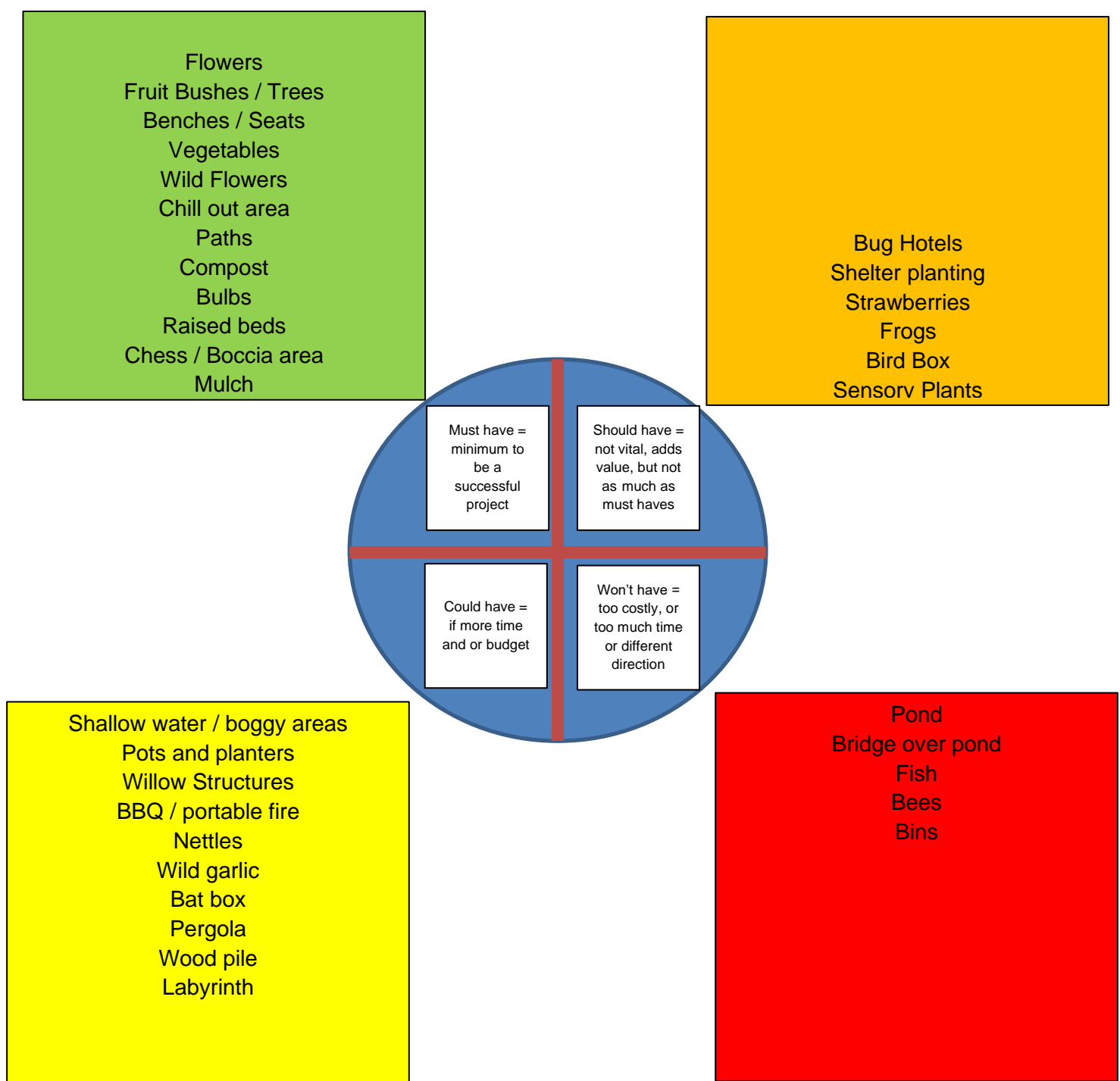
Maintenance needs to be included in grounds maintenance contracts, e.g., cutting grass on paths.

Maintenance over holiday periods.

Poor weather coinciding with teaching days.

There is a footpath across the school grounds which would give access to the space to people outside of school, outside of school hours.

Consideration of importance of different elements using MoSCoW.



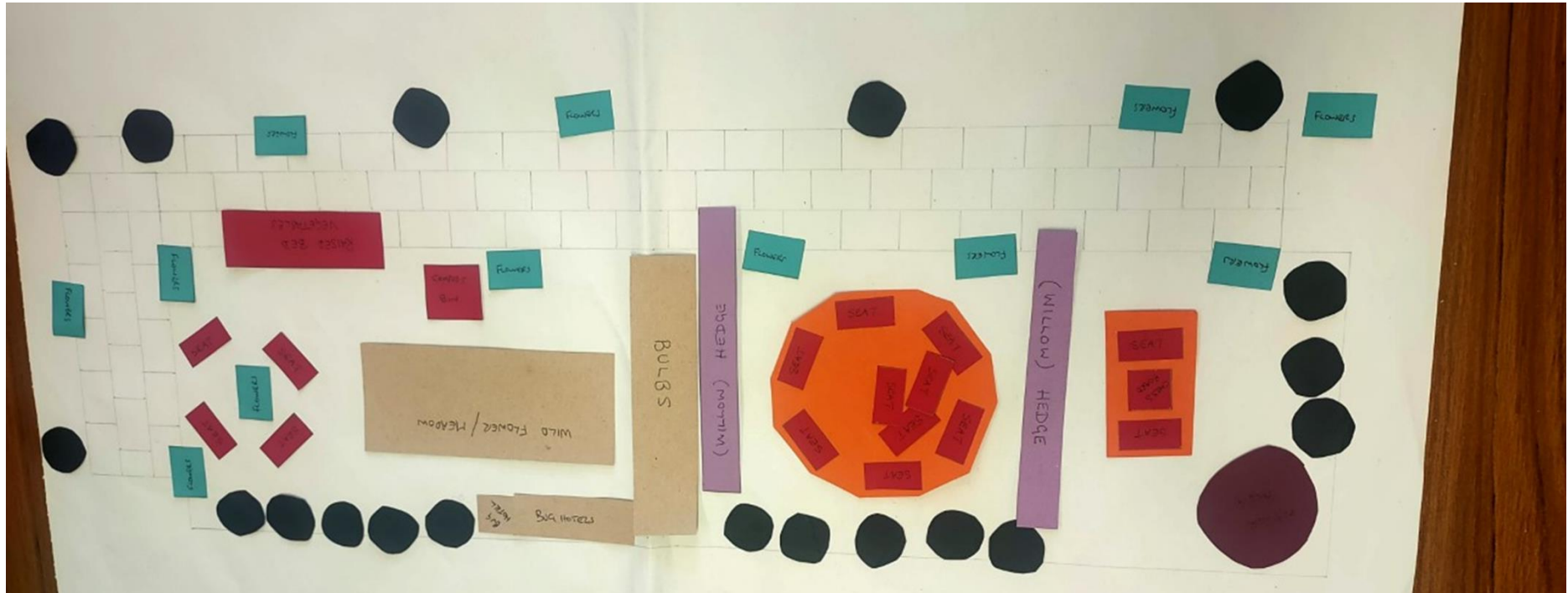


## Principles

<b>Observe &amp; Interact</b>	Implementation of the design will give the pupils an opportunity to observe and interact with nature. The inclusion of a chill area and a teaching sitting area will further provide opportunities for the pupils to be outside and in a safe social environment.
<b>Catch &amp; Store Energy</b>	Having a safe social environment will allow the pupils to have greater energy when they return to lessons after breaks, particularly if some of these lessons are then out of doors. Composting will allow the pupils see the value of the cycle of energy within a system.
<b>Obtain a yield</b>	There are a number of different yields. Earth Care: Increased plants, insects and animals. People Care: Safe social Spaces. Outdoor lessons. Fair Shares: providing food for school and insects and animals. Sharing with other pupils.
<b>Use &amp; Value Renewable Resources &amp; Services</b>	This is a main aim in the implementation of the design, to have a minimal cost, using resources already present on site and donated by myself, other staff and community. The intention is that the design is low maintenance.
<b>Integrate rather than segregate</b>	This is main aim in the design itself to have a space where pupils with social needs feel safe and can integrate outside.
<b>Use slow &amp; small solutions</b>	The design has created a first step, being a structure. The planting elements will develop over time. The implementation plan is limited by available lesson time and school terms, consequently the implementation plan will be over months.

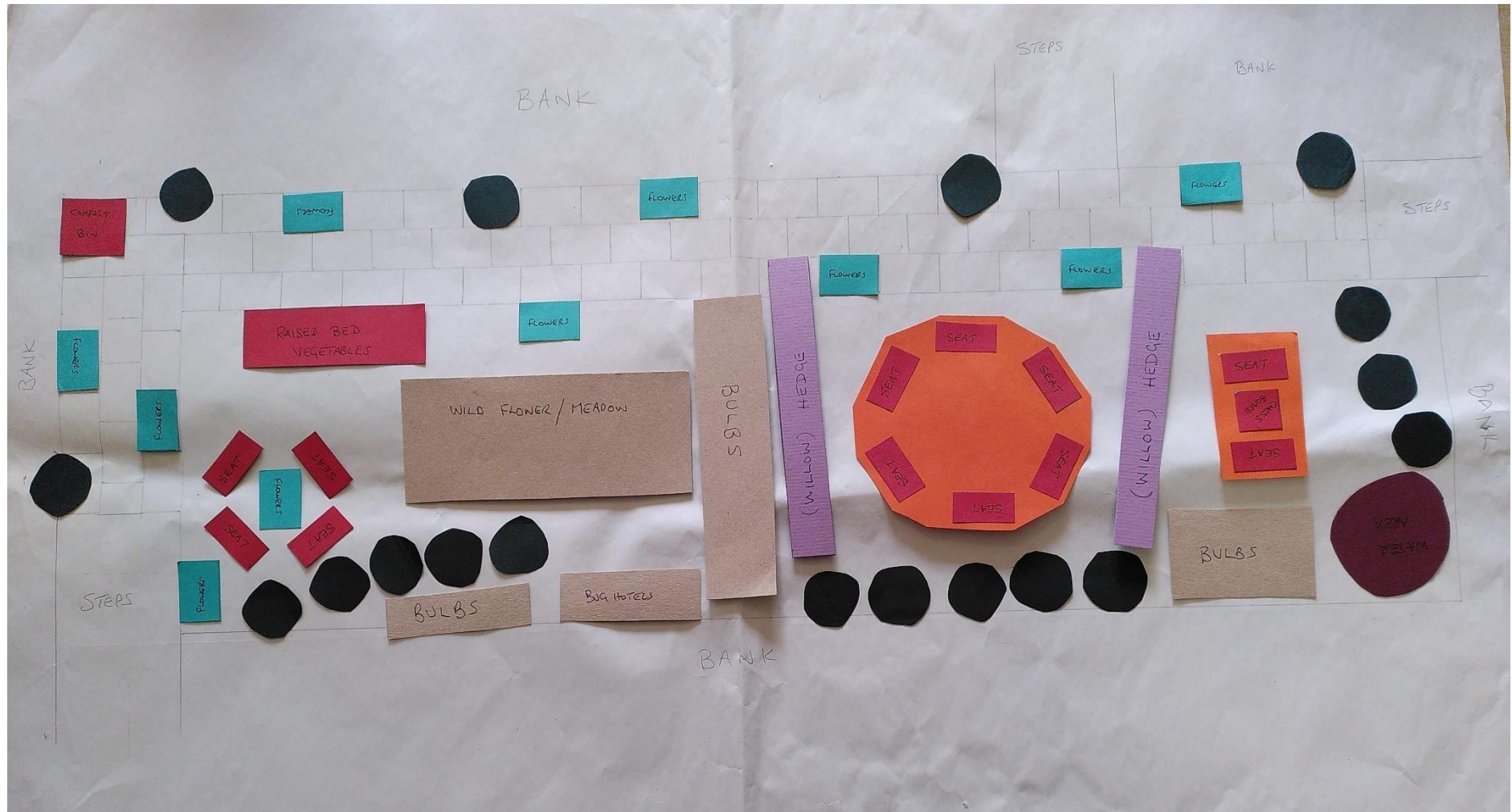
## Design

Design from lesson with pupils.



Dark green circles are bushes / trees, the large brown circle in the bottom right is a wet area.

Final Design with tweaks.



## Implementation

It is my intention that the implementation is driven by collective pupil decisions but obviously has some seasonal element. Hence the plan below is a suggestion only.

### Easter

Willow Cuttings – put to root in rain water  
Start collecting plants.  
Start identifying materials on site and suitability.

### Summer Term

29 April – Planting from donations from home. (Session Plan)  
13 May – Planting willow screen. Water planting area.  
27 May – Sowing wild flowers in pots.  
17 June - Setting up raised bed / hügelkultur. Designing sitting areas and planting up. Mulching with woodchip.  
1 July - Making bug hotels  
15 July – Preparing wild flower area.

### Winter Term

Taking and planting fruit bush / tree cuttings.  
Planting bulbs  
Planting out wild flowers  
Hurdle / fence making  
Defining paths

## Maintenance

The aim of the garden is to be low maintenance therefore the number of regular tasks, once the garden is in place and plants are established will be limited. There will some tending of annuals to meet the Science department request for a raised bed to raise vegetables.

I envisage these as the main tasks:

Planting vegetables	Spring / Summer
Tending vegetables	Summer / Autumn
Picking fruit and vegetables	Summer / Autumn
Mowing wild flower meadow	October
Pruning fruit bushes.	October to February
Cutting Willow Screen	November
Mulching	February
Topping up paths.	February / March

I hope that we can extend the design to include other pupils and other areas. Also, to include parents and community in providing materials and time.

I intend to accredit the work of the pupils through the ASDAN Lifeskills Challenges.

I also hope to carry out a similar activity with pupils at Solway Community School, following on from Diploma Design 7 – Year 7 Lessons on Ecosystems and Permaculture.

## Evaluation

The design meets the functions identified by the pupils. There will be planting that attracts wildlife, there will be areas for “chilling” and for playing Chess. There will also be areas that meet the functions identified by adults, a “teaching area” and a raised bed. We focussed on the Chess Area over an area to play Boccia as this allowed us to motivate C, Boccia was an idea from L who was absent for the first couple of sessions. As Boccia does not have a designated “pitch”, in how L plays it, all we need for a boccia area is to leave a length of the path clear of planting.

There are a whole number of practical projects that can develop from within the design, for example making bug hotels, bird feeders, turning tyres into structures etc.

We are at an early stage of the implementation process and the pupils are learning the absolute basics of gardening and the language involved. For example, the First Planting session demonstrated that planting out something grown in a pot was a new experience to them all. As such the development of the garden will be very much “small and slow solutions”.

Although there are better areas, with regard to sunshine on the site, this location is directly outside the classroom window and is an area accessible to pupils and therefore visible to them.

There is concern from staff of the accessibility of the space outside of school hours to the public. There have been incidents of vandalism in the past. I intend to address this in two ways, firstly by ensuring that the structures are difficult to move. Making seats from tyres could result in those tyres being rolled away, I intend that they are too heavy or fixed to the ground to stop this. More importantly other pupils can see the garden being created and the pupils involved are liked and cared for by the majority of others. This should provide some form of protection. Making the project known is the next stage in its management. I intend to do this through displays, assemblies and social media.

I was pleased with the session based around identifying functions and elements and how this led into creating a design by using card cut-outs of the elements and the pupils locating them on a scale plan.

Only having access to the pupils once a fortnight is a significant disadvantage and I have asked that next year the lessons we are using to do the garden are weekly.

The experience of the First Planting session suggests that I will need to allocate some time to preparations before the pupils are involved. This could be turfing areas, digging larger areas or carrying heavy materials or structures.

## Tweak

We are just at the start of the implementation phase and I envisage that it will be easy to maintain enthusiasm and engagement from the girls for all aspects of the project. The boys will be harder to keep momentum with and they will need to be involved in aspects that are of clear interest to them, for example the Chess table. I can see the design adapting to ensure this, for example including a Boccia court.

When we took up the paving slabs for the First Planting Session it became clear that it would not be possible to simply dig in some compost and use these as planting areas. I would still like to plant in these spaces as it will break up the rectilinear nature of the paths and the grass. I will need to discuss



this with the site manager, my initial thought is to dig out the sand and clinker beneath the paving slabs and infill with wood, turfs and compost. The sand and clinker could possibly be used as ballast at the base of moveable structures, like the tyres, to make them difficult to be moved.

Given the timing of when I can see the pupils, if I was to start again, for example at Solway Community School, I would want to start with the design in the Winter term, so that planting can begin as soon as possible, particularly of bulbs, bushes and trees.

One element we have not given detailed thought to is any enterprise that can develop from selling bulbs and vegetables. This obviously has many functional skills benefits for the pupils.

## Reflection

I thought the “Functions” and “Dream Circle” worked well with the pupils I was working with. They spend a lot of time in school producing answers that the adult wants and it was interesting going from “Functions”, where there was an element of this, to the “Dream Circle” where it was very much more their own voice stating what they wanted.

Producing the design map using cut out shapes also worked well, again starting from a blank plan and them having to decide what went where gave them ownership of the plan. The next step is to get them to begin to be able to transfer from the plan to the space outside. This should come from putting in some key elements, like the willow hedge or the wet area, that will give them special anchors to position other elements.

I am looking forward to getting some of the structures in place so that the pupils can start using the space.

Tools used:

Observation of the space by the pupils	<p>New tools to me in this design were:</p> <ul style="list-style-type: none"> <li>○ Dream Circle, which as I describe above worked well as a focus on the functions of the garden for the pupils.</li> <li>○ Tomas Ramiarz’s Resource Audit I found as a good way to identify resources needed.</li> </ul> <p>This is the second time I have used MoSCoW and it is becoming one of my go to tools, along with PNI.</p> <p>A tool I could have used that I did not was McHarg’s Exclusion tool to identify the area for the garden.</p>
Base Map	
Functions / Elements	
Dream Circle	
Positive Negative Interesting	
Tomas Ramiarz’s Resource Audit	
MoSCoW	

## Use of the Ethics to shape the design:

Although this is identified as a Land Based Design with the outcome of producing a garden from a blank grass area the design process itself is more based around education and inclusion of pupils who are by the nature of their needs on the edge of social and physical activities that other pupils engage with at free times in the school day.

Earth Care – we looked at the location of the site within Cumbria, I always feel that the pupils need to see more about where they live than it being the place where they live. An understanding of location gives them ownership. We spent time, every time we went out, identifying plants and animals in the space, again developing their ability to look beyond the limitation of a green, grassed area. I also wanted them to get their hands in the soil and engage with the planting itself, which comes in future sessions. On a more commonplace level they identified the need for plants and

flowers to attract insects and provide places for other than humans to live, that a garden can be used to grow food and this can be in different ways, for example through fruit bushes or annual vegetables.

People Care – It was very clear, particularly from the older pupils that they wanted somewhere to be able to socialise away from the busy and socially threatening common places in school, and a place to be quiet, somewhere where they could play games at their level and of their interest, not that of the masses. As such elements in the design, for example seats, boccia / chess areas were important for them. For me dividing the space into three basic areas by the willow screen made it possible to create different areas for the different activities. By creating a space over which they have some ownership provides some agency for them.

Fair Shares – In terms of how I managed the design this is the most important ethic. It was paramount for me that all ideas are valid ideas and should be considered equally. Consequently, the final design was their design. I was particularly pleased with the process of producing the final plan, by providing scale cut outs of the different elements and each in turn choosing some and placing it on the base map. This allowed for positive and supportive conversation about decisions and a consensus to be reached.

For me this is a Fair Share design, creating a space in the socially and physically busy secondary school where those on the social and physical edge can be, feel safe and be themselves.

## Update

27 May 2022: After 3 sessions working on the garden, we have planted two small flower beds, made a small pond, bog area and planted some flag iris, planted the willow hedges, made a vegetable bed at ground level and made one seat for the chess area. The pupils went upstairs and looked down on the garden. Their comment was that our progress was good.

My interpretation is that we need to be more focussed on what the pupils want to do. We have done more planting than making. We discussed what different pupils would do next. M and S would like to do some construction and would like to make a bench seat out of The Permaculture Book of DIY. C would like to continue with making the chess area and L and E would like to carry on with planting. Given health and safety restrictions with cutting pallets I will make a flat pack version of the bench and the raised bed that the pupils can then assemble.