

GOBRADIMET

Goals	I intend to link a short introduction to Permaculture into the Key Stage 3 Geography Curriculum. This will cover 4 lessons over two weeks. I intend the pupils to have an understanding of how an ecosystem works, its resilience and interconnectedness and how thinking in this way is part of the Permaculture approach. I intend the pupils to use the three ethics when thinking about something they would want to change in school. I hope that the pupils will use the ethics and principles in future thinking.								
Observation	<p>I want to provide an understanding of the permaculture ethics and some of the principles and give the students the opportunity to carry out some form of design.</p> <p>An Introduction to Permaculture course, over a weekend would cover:</p> <ul style="list-style-type: none">• Ethics and principles• Design• Examples of permaculture• An observation exercise• A video• A practical exercise or walk• An overview of the permaculture network and how to find out more. <p>I would hope to have some of these elements in my lesson design.</p> <table><tr><td>Plus</td><td>Minus</td><td>Interesting</td></tr><tr><td>I work in a small school, consequently I can deliver a unit to all of a year group in one go and I have only to get the involvement of one teacher. I work closely with Year 7, in registration and supporting pupils across the curriculum, therefore I am well known to them and them to me. It is a good professional development opportunity for two teachers from different subject areas to share planning and teaching. Year 7 pupils have a strong liking for things natural and a desire to care for them. Much of the curriculum, for example the Ecosystems Geography unit, focuses on global issues. This is an opportunity to focus locally. Being employed by the school, I do not have to worry about insurance, DBS etc.</td><td>My original thinking was to look at how significant chunks of the curriculum could be taught with a Permaculture perspective. The Key Stage 4 (GCSE) curricula are too prescribed for this and therefore introducing Permaculture is more straight forward in Key Stage 3. What I deliver needs not to be additional but as a replacement of a current element consequently to extend this into other year groups I need to identify like units across the curriculum, for example in Science, Technology, Citizenship. Year 7 pupils do not necessarily have the language to formulate their Earth Care views or the confidence to express them, because of their lack of language and the hierarchy of adults to children.</td><td>Discussion with Deputy Head about getting our pupils to think locally as well as globally with regard to sustainability and environmental issues. She is supportive of any changes the pupils would like to make. Year 7 are also working in Technology on planting vegetables in the raised beds in the playground.</td></tr></table> <p>The best fit is in the Year 7 unit on Ecosystems. They have 7 lessons in this unit: 1 Biomes and their locations 2 Tropical Rain Forest Location and structure 3 Nutrient cycle in Tropical Rain Forest 4 Designed for the rainforest 5 Coral reef location and introduction 6 Value of Coral Reefs and Tropical Rain Forest 7 Threats to Coral Reefs and Tropical Rain Forest The Biomes and their locations unit covers what ecosystems are, biotic and abiotic elements and distribution and characteristics of different biomes. By introducing Permaculture as a design process that mimics natural systems the lessons could replace this unit. Alternatively, the lessons could fit in between lesson 4 and 5, after they have learned about the ecosystems of the rainforest.</p>			Plus	Minus	Interesting	I work in a small school, consequently I can deliver a unit to all of a year group in one go and I have only to get the involvement of one teacher. I work closely with Year 7, in registration and supporting pupils across the curriculum, therefore I am well known to them and them to me. It is a good professional development opportunity for two teachers from different subject areas to share planning and teaching. Year 7 pupils have a strong liking for things natural and a desire to care for them. Much of the curriculum, for example the Ecosystems Geography unit, focuses on global issues. This is an opportunity to focus locally. Being employed by the school, I do not have to worry about insurance, DBS etc.	My original thinking was to look at how significant chunks of the curriculum could be taught with a Permaculture perspective. The Key Stage 4 (GCSE) curricula are too prescribed for this and therefore introducing Permaculture is more straight forward in Key Stage 3. What I deliver needs not to be additional but as a replacement of a current element consequently to extend this into other year groups I need to identify like units across the curriculum, for example in Science, Technology, Citizenship. Year 7 pupils do not necessarily have the language to formulate their Earth Care views or the confidence to express them, because of their lack of language and the hierarchy of adults to children.	Discussion with Deputy Head about getting our pupils to think locally as well as globally with regard to sustainability and environmental issues. She is supportive of any changes the pupils would like to make. Year 7 are also working in Technology on planting vegetables in the raised beds in the playground.
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Boundaries	Obviously, given the age of the students and that the lessons will only cover 4 hours, plus homework, the depth that the elements are covered will be superficial. The lessons will take place in May 2021, while Covid restrictions will still be in place. This significantly reduces the opportunity for pair and group work and therefore results in more teacher input to draw student thinking together. The lessons will be classroom based, with the opportunity to go outside to observe the potential design area, the playground. Given the time scale of 1 ½ hours for the design, including feedback, I envisage that this will require pre-prepared base maps and outlines of elements.								

	<p>As this is a first attempt at teaching this how the lessons are delivered will need to be adjusted as they are taught, while I get a feel for student engagement and knowledge. Language of both ecosystems and of the permaculture ethics and principles will need careful introduction.</p> <p>My school has only one Year 7 class with 23 pupils with abilities ranging from severe learning difficulties to very able pupils. As a consequence, the activities will need to be carefully planned so that all can engage and learn</p>
Resources	<p>I intend where possible for the learning to be student-led , although there will be a need for an explanation of how their ideas and understanding fits with Permaculture thinking.</p> <p>Lesson plans equate to base maps drawn.</p> <p>Permaculture Design Elements Cards 2021 Download</p> <p>Earth Care, People Care and Fair Share in Education: The Children in Permaculture Manual - Lusi Alderslowe, Gaye Amus and Didi A. Devapriya.</p> <p>Earth user's guide to TEACHING Permaculture – Rosemary Morrow</p> <p>Permaculture – teacher's guide – ed Andrew Goldring</p> <p>There are patches of hedge adjacent to the playing fields, containing natural hedgerow plants, e.g. hawthorn.</p> <p>Adjacent to the playground is the nursery. It is bordered by the school buildings on 3 sides and the back gardens of adjacent houses on the east side. It has raised beds, a polytunnel and a play area with wooden gym equipment and a slide, slide</p> <p>Year 7 have recently been doing some planting of the raised beds with vegetables in Technology lessons and therefore have two experiences of the playground area, as somewhere to be at breaktime and lunchtime and as a place for plants and growing.</p> <p>As I will be teaching the unit this means that we will be well supported, with the Geography Teacher and a Teaching assistant.</p>
Analysis	<p>Initial Ideas:</p> <p>Lesson 1</p> <p>To get the students to identify all the elements of a habitat for a sparrow. "What does a sparrow need to live?" To introduce the interconnectivity of an ecosystem. Explain that Permaculture looks to design systems that look like ecosystems. Introduce the concept of resilience in ecosystems.</p> <p>To identify the ethics through looking at what they would want the world to be like for different people, animals and plants in the future. The ethics define the areas that we want to promote and be resilient in Permaculture design.</p> <p>Observation at home see, hear, feel, smell, (Homework)</p> <p>Lesson 2</p> <p>To look at some of the principles:</p> <p>The problem is the solution - Stinging nettles</p> <p>Each element performs many functions</p> <p>How many different uses can you think of for a:</p> <ul style="list-style-type: none"> • Broom • Piece of string 1m long • A spoon • A sheet of newspaper • A needle <p>Each important function is supported by many elements</p> <p>How many different ways can you think of to:</p> <ul style="list-style-type: none"> • Heat a pan of water to make tea. • Send a message • Travel to school • Say hello • Provide food for a meal <p>The yield of a system is theoretically unlimited – different sorts of capital – Yields of owning chickens</p> <p>Catch and store energy – What are the sources of energy available? What natural things might we want to store?</p> <p>Use and value renewables – Cycles of nutrients, water, etc https://www.youtube.com/watch?v=ycLbO02lb7w</p> <p>Produce no waste – reuse, repurpose, recycle. How many different purposes can you think of for a plastic water bottle?</p> <p>Observe and interact – Outside, identify, wind direction, water, soil, sun, where people go.</p>

<p>Use edges and value the marginal – weeds?</p> <p>Lesson 3 and 4</p> <p>Random assemblies game based on what you want in your garden.</p> <p>Video example of a permaculture designed garden</p> <p>https://www.youtube.com/watch?v=1ly7zkis0Tc</p> <p>Garden / playground design – Observation questionnaire - introduce zones and sectors Use permaculture design elements cards. Students explain the permaculture principles of their design.</p> <p>Bioregion quiz (Homework)</p> <p>Client Interview:</p> <p>Following discussion with the Geography Teacher, I have decided to focus only on observation and each element performs many functions and each important function is supported by many elements. Other elements may form part of a Year 8 unit. Also need to consider how to make accessible the design section. Also decided to create a booklet for them to work in as this is an additional unit of work and may well start before they have finished the previous one.</p> <p>We decided that:</p> <p>Lesson 1 should be introducing ecosystems, permaculture and the ethics.</p> <p>Lesson 2 should be looking at a few principles</p> <p>Lessons 3 and 4 should be planning improvements for the playground that are earth care, people care and fair share.</p> <p>I decided to drop the “Random Assemblies” game, the bioregional quiz and the video examples of permaculture design to focus in on the Ethics and web of connections through thinking about the principles of “Each element has many uses” and “Each important function is supported by many elements”.</p> <p>I also added a pupil questionnaire in the form of 3 Stars and a Wish.</p>		
Functions – what is to be learned	Systems – teaching approach	Elements - lesson specifics
Understanding of what an ecosystem is in “geography speak”	This will develop from observation of a short film clip showing house sparrows and then the hedge.	<ol style="list-style-type: none"> 1. Watch sparrow video, discuss how sparrow number have fallen. 2. Go outside and ask what they can see in the hedge. Develop ideas by asking what does sparrow need, what do those elements themselves need, what about threats etc. 3. List what they have observed around a picture of a hedgerow and make links between the elements. 4. Defining definition of an Ecosystem and biotic and abiotic elements.
Understanding how ecosystems link to permaculture	Teacher led explanation of resilience in ecosystems and definition of permaculture linked to ecosystems.	<ol style="list-style-type: none"> 1. Definitions of key vocabulary, e.g. resilience, design, ethics and principles.
Discovering the Ethics	Pupils identify one change they would like to make in the world, given examples. In non-covid times this would be think, pair, share.	<ol style="list-style-type: none"> 1. All pupils’ ideas put into a blank 3 column table. 2. Identify the columns as the three ethics.
Using observation	Homework	<ol style="list-style-type: none"> 1. List all the natural things you can see or hear in your garden / outside your house.
What is “Each element has many uses” and how does it fit to an ecosystem	Pupil imagination making lists of uses of elements and different elements for one function.	<ol style="list-style-type: none"> 1. Introduce vocabulary. 2. Uses for a stick. 3. Uses for a tree. 4. Ways to travel to school. 5. Food sources for a sparrow. 6. Talk about human impact on ecosystems. 7. Emphasise that they are thinking like an ecosystem.
What is “Each important function is supported by many elements” and how does that fit to an ecosystem		
Thinking about the ethics when designing	Practical pupil led activity, with teacher facilitation.	<ol style="list-style-type: none"> 1. Pupils have period of time outside thinking about what they could change. 2. Different ways of presenting are acceptable. 3. All will have to give a talk of less than one minute on their ideas, to Head Teacher.

Design	Input – lesson elements	Output / Goals
	Sparrow video. (Slide 2) Hedge observation. (Slide 3) Ecosystem definition. (Slide 4 and 5) Homework - Observation The Problem is the solution (slide 10 and 11) Each element has many uses (Slide 12 and 13) Each important function is supported by many elements (Slide 14 and 15) Different Food sources makes for resilience (Slide 16)	Understanding of how an ecosystem works, its resilience and interconnectedness
	Permaculture is ... (Slide 5) Identifying the Ethics (Slide 6, 7 and 8) Homework - Observation Observation Principle (Slide 9) The Problem is the solution (slide 10 and 11) Each element has many uses (Slide 12 and 13) Each important function is supported by many elements (Slide 14 and 15) Human impact on ecosystems (Slide 16)	How thinking in this way is part of the Permaculture approach.
	The Ethics as a Venn diagram (Slide 8) Design (Slide 17 and 18) Presentation of ideas	The pupils to use the three ethics when thinking about something they would want to change in school.
	Three stars and a wish. Classroom display of Three ethics, some of their designs and the Each element has many uses and Each important function is supported by many elements. Implementation of ideas in reality.	The pupils to begin to use the ethics in future thinking.
Below is the pupil booklet and the PowerPoint with notes, for my delivering the lesson. I have brought text forward where it would have been covered by blocks of colour and then revealed.		

Ecosystems and Permaculture



Name: _____

Extending – <ul style="list-style-type: none">Understand how changes in one element in an ecosystem might impact of others.Be able to think about how the ethics might impact on their decisions.
Securing – <ul style="list-style-type: none">Understand that an ecosystem is the interconnection of different living and non-living things (biotic and abiotic)Be able to give examples of how the ethics might be used.
Developing – <ul style="list-style-type: none">Understand that an ecosystem is the interconnection of different things.Know the three permaculture ethics

Glossary

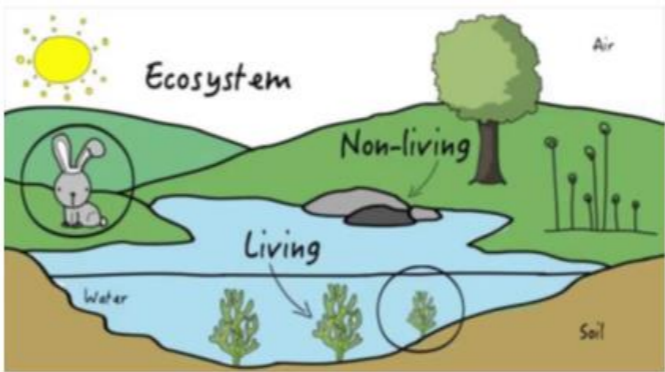
Abiotic	Non-living things, like rocks and water
Biotic	Living things, animals and plants
Design	A plan for what you want to do
Ecosystem	A community of plants and animals sharing an environment with non-living things.
Element	Something in a design that helps a function happen
Ethics	In Permaculture the three main ideas behind any design, Earth Care, People Care and Fair Shares.
Function	What you want to happen
Imagination	The only things that limits you.
Permaculture	A design system based on ethics and principles and modelled on nature.
Principles	Thinking tools that help our design.
Resilient	Being able to recover from something.

What are the elements of a hedgerow ecosystem?

Draw lines to connect the elements.



An Ecosystem is:



Biotic –

Abiotic –

Examples:

Biotic	Abiotic

Ecosystems, if left to themselves, are resilient. This means that if something happens it can recover quickly. For example, the weather may be really wet one spring and the sparrows not be able to nest and bring up their young. They will try again when the weather is better and have a second brood.

Permaculture is:

A design system based on ethics and principles and modelled on nature.

It is a way of thinking and doing that is inspired by natural ecosystems.




Homework – my ecosystem

Sit in your garden or look out of your window for 15 minutes and list all the natural (biotic) things you can see or hear.

[illegible]

Permaculture Principles:

- Observe and Interact
 - The problem is the solution -
I have too many slugs in my garden, I don't have enough _____.
 - Each element has many uses
List all the uses you can think of for
a stick.
- 

[illegible]

What are the uses for a tree in a hedge?

- Each important function is supported by many elements

How many different ways could you travel to school?



How many different types of food are there for a sparrow?



Having lots of different sources of food in an ecosystem makes it resilient. For example, if all the caterpillars hatch into butterflies, then the sparrows have other things to eat.

Humans are part of the ecosystem as well, putting food out for the sparrows.



Design:

How to improve the playground.

The only limit to the design is your imagination.



You are going to make three improvements to the playground.

One should be an earth care improvement; one a people care improvement and one a fair share.

The improvements could be something physical, for example building a shed or planting a tree, or it could be how things are done, for example who else could use the playground.



Earth Care Improvement




People Care Improvement

Three Stars and a Wish


Ecosystems and Permaculture



Write or draw three things that you enjoyed or learned about:

Write or draw one thing you would have liked to be better or would like to have learned about.

	
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Ecosystems and Permaculture



<https://www.loom.com/share/a0101a2897444523a6f05b19e6a256c8>

House sparrow:

Since the 1970s, numbers in rural England have nearly halved while numbers in towns and cities have declined by 60 per cent. Because of these large population declines, the house sparrow is now red-listed as a species of high conservation concern.

Go outside and look at a section of hedge:



What can you see that a sparrow may need?

What does that need?

What about threats?

Slide 3

What are the elements of a hedgerow ecosystem?



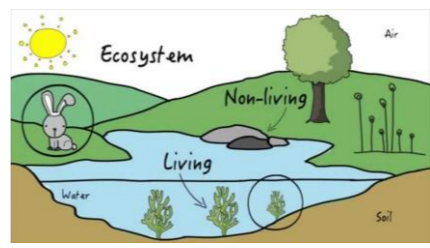
List around the hedge the things identified outside. These are all things in the hedgerow ecosystem.

Join any that have a connection. Things in ecosystems are all connected.

Slide 4

An Ecosystem is:

A community of living organisms (plants and animals) sharing an environment with non-living components.



Biotic –

Abiotic –

What we have done is identified elements of a hedgerow ecosystem.


Copy the definition of an ecosystem.

What do biotic and abiotic mean?

List some biotic and abiotic things

Slide 5

Ecosystems, if left to themselves, are resilient. This means that if something happens it can recover quickly. For example, the weather may be really wet one spring and the sparrows not be able to nest and bring up their young. They will try again when the weather is better and have a second brood.



Permaculture is:

A design system based on ethics and principles and modelled on nature.

It is a way of thinking and doing that is inspired by natural ecosystems.

The earth tries to adjust all the time so that conditions for life continue. What we do as humans can mean that the earth cannot adjust itself.

How do ecosystems and permaculture fit together?

Design – is more than something you do in the tech, food or art rooms, design is how to plan and organize how you do anything.

Ethics are the main ideas of a way of thinking.

Principles are tools that help with the thinking.

Slide 6

What would you like to change in the world to make it better?

You could imagine you are:

- a polar bear on a melting ice cap
- someone sleeping on the streets
- a child in a war zone
- a tree in the Amazon rainforest
- a family facing famine
- a family without a working toilet
- a person with a disability

Give 5 minutes thinking time. Then add to table.

Slide 7

Permaculture Ethics		
Earth Care	People Care	Fair Share

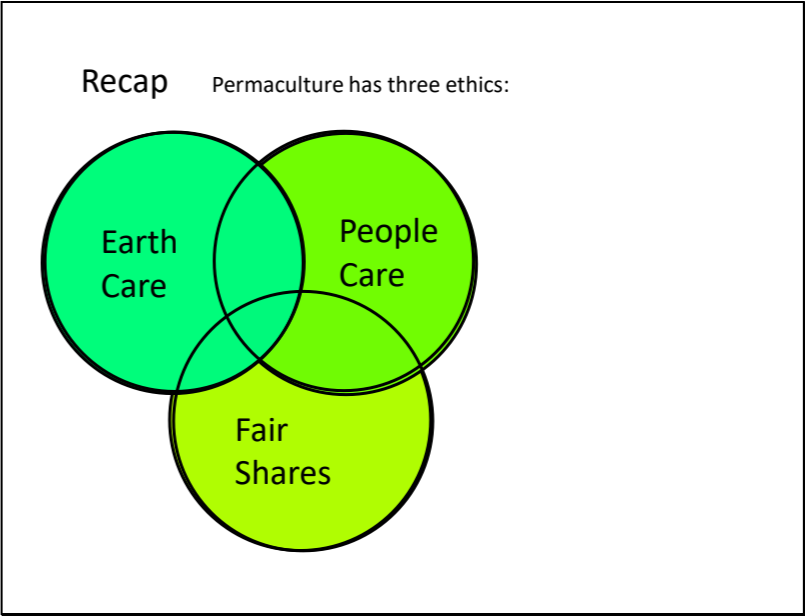
Add ideas to table. Put any that are not EC, PC FS on the whiteboard.

In Permaculture the ethics three main ideas behind any design, Earth Care, People Care and Fair Shares. These are summarised on page 6

End of First Lesson

See Homework

Slide 8



Permaculture has principles that help with designing.
We have already looked at:
Observe and interact.




1. *Observe & interact*
"Beauty is in the eye of the beholder"

Permaculture has a range of different thinking tools that help with design. We call these principles. We are going to look at a few of these. They are in red type on the following slides.

You observed and interacted when we went an looked at the hedge. This is the most important principle. For example, if you are designing a garden, you will need to know where the sunny and shady parts are, where the dry and wet parts are, where the hot and cold parts are, which way the wind blows, how much rain is there, what the soil is like, what the slope of the ground is, and many other things. This could take you a year to do.

The Problem is the Solution

What do you know about stinging nettles?



Butterfly and moth food

Good for mulch - keeping weeds down

Good for making compost

Can make liquid plant food

Donkeys eat them

You can make nettle soup

They're high in vitamin C

You can make nettle tea




You can make nettle beer

You can make cloth out of them

Stinging nettles are a problem in my vegetable patch and orchard. But I have turned my thinking around they are full of nutrients for plants so cut them down and leave them to rot on the ground to feed the trees or cut them down and put them on my compost heaps.

The problem is the solution –


I have too many slugs in my garden, I don't have enough _____.



What might I need to have more of to reduce the slug population?


Each element has many uses

I don't put my newspapers in the recycling because I can:
Light the fire with them
Use them for mopping up mess
Use them to clean windows
Use them for cat litter
Make paper hats
Make paper airplanes
Scrunch it up and use it to pack fragile things
Put it on the vegetable beds to kill weeds
Make things out of papier mache
Stuff them into my wellies when they get wet
Put on the floor when I am polishing my shoes
Put under my sleeping bag to insulate me when I'm camping
Stuff into draughty gaps
Wrap up broken glass
Make pots for planting seeds
Clean the oven



An element is something in a system. We listed lots of elements in the hedgerow ecosystem when we went outside. In Permaculture we like to have things having lots of different uses. For example:

How many uses can you think of for a stick?



You are limited only by your imagination!

What are the uses for the tree in a hedge?






We talk a lot about reduce, reuse, recycle. The more imaginative we are the better we will be at this.

Trees provide shade, perches, places for nests, home for insects, oxygen, food, protection from predators, shelter from the wind, peace and calm, leaves create compost, seeds, ...


Each important function is supported by many elements

How many different ways could you travel to school?



A function is something you want to happen or to do. So, the function here is travelling to school. The elements are the different ways.

How many different sources of food are there for a sparrow?



corn

sunflower seeds

plums

millet

soybeans

chips!

insects

rice

buds

fruit

grapes

kitchen scraps

apples

lettuce

seeds

grass seeds

peaches

suet

oranges

bird seed

wheat

niger seeds

aphids

cherries

porage

oats

caterpillars

berries

pears

breadcrumbs

grated peanuts


peas

tomatoes

ragweed

What do you think a sparrow might eat?

Having lots of different sources of food in an ecosystem makes it resilient. For example, if all the caterpillars hatch into butterflies, then the sparrows have other things to eat.



Humans are part of the ecosystem as well, putting food out for the sparrows.

End of Lesson 2

Design:
How to improve the playground.

The only limit to the
design is your
imagination.



You are going to make three improvements to the playground.

One should be an earth care improvement; one a people care improvement and one a fair share.

The improvements could be something physical, for example building a shed or planting a tree, or it could be how things are done, for example who else could use the playground.



You can present your designs any way you want. You can write about them, draw diagrams and label them, give a short talk about them.

Implementation	I delivered the lessons on 18 th , 20 th , 25 th and 27 th June. Pupil attendance was good. I had one pupil join the school for the last lesson, and he was able to pick up the basic concept of the Ethics and I had one pupil who had to isolate and was able to engage through a Microsoft Teams meeting with the teaching assistant.											
Management and Maintenance	The management of the lessons was straight forward, given the level of staffing we had. The pupils were all engaged and enjoyed the different approaches. It was necessary to time the length of the imaginative activities and the designing sections based on monitoring the engagement of the pupils in the task. The focus on low literacy requirements allowed all to engage and the focus on the plan being presented to the Head Teacher also allowed them to focus on ideas as opposed to recording those. I asked the teacher to note down the pupil’s ideas for playground improvements so that we had a record. Initially setting the task as three separate ideas evolved for most pupils into one idea and identifying how the three ethics fitted into that. Nevertheless, having the opportunity for three separate ideas did allow for some differentiation by outcome. The more able picking up the idea of the Ethic sweet spot where your design impacts on all three and the less able being able to think of individual ideas for each ethic. Next Steps: My intention for maintaining the Permaculture element beyond the lessons was to put up a display of the work done and implement some of the designs along with the Technology Department. I also hope to look through the Key Stage 3 curriculum in Geography and other subjects. I also will put together a list of their improvements and take to Senior Team for which they could implement. Look to where the next lessons could be in Year 7 and Year 8.											
Evaluation	<table><tr><th>Strengths</th><th>Weaknesses</th><th>Opportunities</th><th>Challenges</th></tr><tr><td><ul style="list-style-type: none">Being a small school meant that I was working with one class and one teacher, so once I had her agreement I did not have to “sell” the idea to anyone else. She was also keen as the timing fitted well with her going on maternity leave giving her some space for planning.Planning together was helpful.Team teaching is helpful in terms of ensuring the Geography content.Permaculture fits well with ecosystems and I emphasised how the students were “thinking like an ecosystem”.The playground is a defined area that the students know well.</td><td><ul style="list-style-type: none">Covid restricted teaching strategies, for example using “Think, Pair, Share”.Maintenance restricted by Covid implications, e.g., could not do a display as the teaching rooms changed.And by changes to role, which took time away from looking for other parts of the curriculum to use in the future. Although there is still time for this.In terms of planning, I had many other ideas for using the principles that would not fit into the time scale.</td><td><ul style="list-style-type: none">Links with the Technology Department with tree planting and making bug houses.Future inclusion into “Cumbria Award” a Humanities curriculum used in a partner school that focuses on the local and is probably to be taken on at Solway.Links with the Nursery could be explored in the future.Planning to deliver more of the lessons out of doors.</td><td><ul style="list-style-type: none">Where to I take this next? Cumbria Award, other areas of the curriculum, working with other schools?To continue to ensure future lessons are fully inclusive.Finding time to follow up the designs.</td></tr></table> <p>Overall, the lessons were successful, the pupils engaged with the idea of being limited only by their imagination. They were able to recall from lesson to lesson the concepts of what an ecosystem is, how it has lots of connections and the three ethics. In future delivery I think I would be aiming at one idea for an improvement to the playground and using the Ethic Venn diagram for them to record how it hits each ethic. I think this would work with the less able pupils with some support or allowing them to think of one ethic at a time.</p> <p>I would remove the “The Problem is the solution” section and focus on the principles that emphasise the interconnectedness of an ecosystem. Possibly “Use and Value Diversity”, “Use edges and value the marginal”</p> <p>Pupil responses to the 3 Stars and Wish included how they enjoyed and valued lessons focussed on the environment and thinking about others, how the liked going outdoors, how they liked the opportunity to use their imaginations and be creative and how they liked the sharing of different ideas. They wished for the opportunity to put their ideas into practice and to learn more about ecosystems, wild life and Permaculture.</p> <p>My favourite response was “The homework where we had to go outside and write down the things we noticed, because I enjoyed it and it was relaxing.”</p> <p>How are the Ethics evident in the design?</p> <p>Overall, one of my hopes from teaching Permaculture is that the pupils will have the language to be able to express their views, with these lessons I would hope that they can be critical of actions of themselves and others by comparing them to the three ethics.</p>				Strengths	Weaknesses	Opportunities	Challenges	<ul style="list-style-type: none">Being a small school meant that I was working with one class and one teacher, so once I had her agreement I did not have to “sell” the idea to anyone else. She was also keen as the timing fitted well with her going on maternity leave giving her some space for planning.Planning together was helpful.Team teaching is helpful in terms of ensuring the Geography content.Permaculture fits well with ecosystems and I emphasised how the students were “thinking like an ecosystem”.The playground is a defined area that the students know well.	<ul style="list-style-type: none">Covid restricted teaching strategies, for example using “Think, Pair, Share”.Maintenance restricted by Covid implications, e.g., could not do a display as the teaching rooms changed.And by changes to role, which took time away from looking for other parts of the curriculum to use in the future. Although there is still time for this.In terms of planning, I had many other ideas for using the principles that would not fit into the time scale.	<ul style="list-style-type: none">Links with the Technology Department with tree planting and making bug houses.Future inclusion into “Cumbria Award” a Humanities curriculum used in a partner school that focuses on the local and is probably to be taken on at Solway.Links with the Nursery could be explored in the future.Planning to deliver more of the lessons out of doors.	<ul style="list-style-type: none">Where to I take this next? Cumbria Award, other areas of the curriculum, working with other schools?To continue to ensure future lessons are fully inclusive.Finding time to follow up the designs.
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<p>Earth Care:</p> <p>I hope that we will be able to implement some of the ideas the pupils have come up with. Their ideas predominantly derived from Earth Care. In the longer term that by looking at their local ecosystems that “In the end we will conserve only what we love, we will love only what we understand and we will understand only what we are taught.” Baba Dioum, quoted at the 1968 triennial meeting of the General Assembly of the International Union for the Conservation of Nature and Natural Resources, (Valenti & Tavana, 2005).</p> <p>People Care:</p> <p>In terms of planning the lessons the people care ethic comes through the acceptance of all answers as correct and the focus on ideas as opposed to the literacy of recording those ideas. This was evident in that all pupils who had attended the lessons in full, were confident enough to put their ideas across. This allowed for students with severe learning difficulties to contribute and have their contributions valued.</p> <p>Fair Share:</p> <p>The fair share ethic is reflected in the differentiation, thinking how is this accessible to both the pupil with severe learning difficulty and the most able. Similarly, a pupil who joined the school part the way through was able to engage in the design element and a pupil who was isolating was able to, with some adaptation to the design elements, engage with the lessons. I was able to emphasise Fair Shares thinking by prompting the students to think of the impacts of their designs outside of the school, with the houses backing onto the playground and the nursery that shares the site.</p> <p>The design section of the lessons provided an opportunity for discussion around thinking about how an idea or element could have Earth Care, People Care and Fair Share Elements. Quite often this was around how they could involve children from the nursery or the residents from the houses backing onto the area in their design.</p> <p>The Design through the lens of the Principles.</p> <p>The problem is the solution:</p> <p>Permaculture is mentioned in some GCSE and A Level Geography syllabuses, but only in passing, whereas the ethics and principles are relevant to an inclusive approach to learning and to the education of young people in sustainability. So, to introduce Permaculture to Year 7 pupils within a mainstream lesson gives it parity with other lesson content.</p> <p>Young people do not necessarily have the language to express their feelings with regard to how they fit into society and the environment. The hierarchy of adult and children takes away their voice. By giving the pupils the language of the Permaculture Ethics, they can critique the actions of themselves and others with appropriate language.</p> <p>The common of those outside education to raising their particular issue is that it should be taught in schools. But the school week is full, there is already a 25 hour a week curriculum. Therefore, any new content needs to either replace what is there already or what is there already needs to be viewed differently. This is the only way to keep workload consistent. By teaching the ecosystem unit through Permaculture I endeavour to do this.</p> <p>The yield of a system is theoretically unlimited:</p> <p>I designed some of the activities so that there were no wrong answers, the pupils could be as imaginative as they wished. I then tied to get them to think in this way when they were applying the Ethics to their ideas for improving the playground.</p> <p>Observe and Interact:</p> <p>This is a key principle in teaching and planning learning. My knowledge of the pupils is key to ensure that all are able to engage. It also is important in managing any learning as the reaction of the pupils to the activities is a governing factor for how concepts are developed and how and when activities are moved on.</p> <p>Apply self-regulation and accept feedback:</p> <p>I felt it was important to ask the Geography teacher what she thought of my initial ideas in order to get a feel for the pupils’ prior knowledge, particularly in terms of the language to be used.</p> <p>I also used the pupil questionnaire to identify their views on successful or unsuccessful lesson elements and what they would like more of.</p> <p>Each important function is supported by many elements.</p> <p>Through the planning of the lessons, I returned to the goals. In the first two lessons “Understanding of how an ecosystem works, its resilience and interconnectedness” and “How thinking in this way is part of the Permaculture approach.” Repeatedly stating that they were “thinking like an ecosystem”. In lessons 3 and 4 the emphasis was on “The pupils to use the three ethics when thinking about something they would want to change in school.” Pupils were most happy thinking of Earth care ideas, so questioning focused on how could that also be people care and fair shares.</p> <p>Were the Goals met?</p> <table><tr><td>I intend to link a short introduction to Permaculture into the Key Stage 3 Geography Curriculum. 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Tracking	<p>The Year 7 Geography Curriculum has been adjusted for next academic year with the ecosystems unit being taught first as opposed to last. As a consequence, logistically, it would be better to have the Ecosystems and Permaculture unit later in the sequence of lessons, giving the subject teacher time to develop their structure and management to the class, before someone else delivers a unit of teaching. The unit would need to be adjusted to take into account that the pupils would already have been taught about ecosystems. This may allow for the introduction of tools such as web of connections in an explicit way. Post covid restrictions teaching can be more peer to peer led with pair and group work. This may allow for a group of three looking at a playground improvement with each taking a responsibility for one ethic.</p> <p>Proposals to Senior Team from Pupil ideas:</p> <table><tr><th>Planting</th><th>Making</th><th>Equipment</th></tr><tr><td><ul style="list-style-type: none">● Bushes● Trees, (including blue blossom trees)● Long grass● Flowers● Sensory plants (Mental health garden)● Hanging baskets</td><td><ul style="list-style-type: none">● Bug hotel● Pond● Bird bath● Bird feeders● Bird houses● Tepee</td><td><ul style="list-style-type: none">● Shed● Football goals and nets● Benches● Swings and tree swing● Box of toys● More equipment● Play equipment for nurse</td></tr><tr><td><ul style="list-style-type: none">● Plant bare root native hedging in Autumn term along gaps in boundaries. Aim to create larger connected areas / corridors. There are offers from the woodland Trust currently, I think. There are also local nurseries.● Plant fruit / blossom trees. 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Reflection based on Accreditation Criterion

ACCREDITATION CRITERION 1: Demonstrating design skills			
(for further guidance, see section C3, page 5, in the Guide to Accreditation Criteria)			
		What's gone well?	What could have been done differently?
1a	The design uses an appropriate design framework or intentional process accurately	I used GOBRADIMET to include Goals within the design as I wanted to begin the process of introducing Permaculture to School. I felt that it fitted reasonably well with the design being the lesson plans.	I think the analysis section next time would be better defines as I now have a better idea of how much content I can include. Given the difficulties I Have had in maintaining momentum from the lessons I may consider Looby's Web next time.
1b	It references the permaculture ethics appropriately	It was interesting to, and a challenge, to separate the Ethics within the lesson plan and the process of the design itself. Teaching, itself fits nicely within the People Care and Fair Shares ethics,	If I could have had the children working in groups, I would have been able to consider Earth Care more in terms of resources I used, for example the number of booklets, produced.
1c	The design uses permaculture principles & theory that are appropriate to the situation	It was interesting to consider how the principles fitted with my pedagogic approach, particularly "the yield of a system is theoretically unlimited" and "Each important function is supported by	Creatively Use & respond to change is one principle that I would need to consider in turns of how I take this forward into other areas of the curriculum.

		many elements”. Both of these allowed the pupils to let their imaginations run free and therefore have some ownership of their ideas.	
1d	It uses a variety of tools to suit the needs of the situation/ design brief	In the design I used: Plus, Minus Interesting Client Interview Function System Elements Input / Output Strengths Weaknesses Opportunities and Challenges I have struggled to get my head around Functions System Elements and found linking these to “what is to be learned”, “the teaching approach” and “the lesson specifics” an effective way to consider a lesson plan.	I wonder whether a design questionnaire would be helpful initially in discussions with subject teachers.
1e	The design is intelligible, coherent and effective, meeting the client’s needs	As I felt that the lessons were successful it met the subject teachers, pupils and my needs.	The resources section reflects where I started my thinking, but it did not have much influence on the design itself. Nevertheless, it will have relevance in future teaching designs.
1f	The documentation is appropriate to present to the clients and others	The documentation is mainly for my own reference, in terms of what I do next and meets that need.	

ACCREDITATION CRITERION 2: Applying Permaculture design to projects

(for further guidance, see sections C2, page 4, and C4, page 6, in the Guide to Accreditation Criteria)

Areas of Application (delete all that don’t apply)

Education & training

		What’s gone well?	What could have been done differently?
2a	SURVEY There is a clear explanation of how the design brief was investigated through surveying the situation and gathering the information.	I had two directions for surveying, the school curriculum and the permaculture content. I feel that these have merged well together.	I had a fairly free rein with the lessons, in future I will probably need to work more closely with the teaching in defining what is to be delivered and how.
2b	ANALYSIS & DESIGN There is a clear explanation of how the design decisions and solutions were developed.	The narrowing down of the content was a strength in the terms of the effectiveness of the final lessons.	It would have been better if I had designed the follow up, for example displays, implementation of the pupil designs within the design itself.
2c	IMPLEMENTATION & EVALUATION PLANS The solutions are relevant and appropriate to the area and design brief.	The lessons went well and the pupils responded well and enjoyed the outdoor element and the different teaching style.	

ACCREDITATION CRITERION 3: Learning from and developing your permaculture practice

(for further guidance, see section C5, page 7, in the Guide to Accreditation Criteria)

	What’s gone well?	What could have been done differently?
3aThe design report includes an evaluation of the design’s effectiveness .	The evaluation section is of particular interest to me with this design as I would like to do more of this within school.	Although I have referenced the Ethics with regard to the design process, I feel this could be stronger.
3b There is critical reflection on how you used theory, design tools, and processes, and some next steps for this design.	Referenced in this section of the document.	

3c The design shows how **design skills and competence have progressed** and some next steps for design practice.

This is my first teaching design. I have been more confident in using the Function Systems and Elements tool.
Next with regard to Teaching I am taking part in the CiP Practitioners Course.