



Curriculum pack 4 – Great eco challenge

Taylor
Wimpey

Introduction




This curriculum pack is aimed at key stage 2 pupils and comprises six team-based activities focusing on the importance of considering the environment when planning a new housing development.

- **Activity 1** – Design an eco-home
- **Activity 2** – Eco thinking
- **Activity 3** – A day in my life
- **Activity 4** – What a load of rubbish
- **Activity 5** – Recycle challenge
- **Activity 6** – Wildlife study

Appendices

- **Teachers' notes**

Where you see the  symbol you may wish to contact a local building industry professional to help you deliver the activity. Each of the six activities carries a number of Taylor Wimpey 'eco points'. The greener your thinking in each activity, the more points you will collect. The team with the most eco points at the end of the project will be declared the winners!

Some activities are accompanied by a supporting resource sheet. Teams can use these sheets to prepare their answers – you can photocopy these sheets as needed.

At the front of this pack there is a team-mate sheet (Resource sheet 1a: Are you eco friendly?) and a score sheet (Resource sheet 1b: The great eco challenge) that pupils can use to record the eco points they collect through each activity – you can photocopy these sheets as necessary.

Resource sheet 1a: Are you eco friendly?

Collect eco points as you go through the challenges.

The team with the most eco points at the end will win!

Names of eco team-mates are:

Our eco team name is:

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Resource sheet 1b: The great eco challenge

Save energy! (Your teacher's that is!)

Keep a note of your own eco points as you go through the activities.

Activity name	Maximum eco points available	Your team eco score
1. Design an eco home	10	
2. Eco thinking	8	
3. A day in my life	10	
4. What a load of rubbish	20	
5. Recycle challenge	10+10 bonus winners' points	
6. Wildlife study	40	

The maximum eco score possible for your team is 108.

Creating modern housing developments that are wonderful to live in and kind to the environment takes a lot of planning and consideration. How did your team score in these six activities? Compare your score with the other teams in your class to see who is the winner!

Design an eco-home



Activity 1

Eco-friendly design

- **DESIGN** an eco-home. You may want to use the list of seven eco areas on Resource sheet 2 to help you.
- **RATE** your design against each of the seven eco areas. Have you included all seven? What would you award your home overall?

Points available: You can earn up to 10 eco points, 1 for each area covered by your design and 3 for rating your design.

Resource sheet 2: Design an eco-home

What is an eco-friendly home?

An eco-friendly home is designed and built to be as kind as possible to the environment.

New home builders such as Taylor Wimpey consider lots of factors when designing and building new homes to try to reduce the impact they can have on the environment. This includes things like reducing the amount of waste produced when building new homes, using recycled materials and ensuring homes are energy efficient. The 'Fabric First' approach ensures that these improvements are literally built into the design.

Seven main eco areas are examined when determining how eco-friendly a home is:

- 1. Energy** – features such as double glazing, insulation and efficient heating systems help improve the energy efficiency of a home.
- 2. Water** – fitting economical kitchen appliances, low flush toilets, water efficient taps, and showers instead of baths to help conserve water. Low flush toilets (also known as dual flush toilets) have the ability to flush with two different volumes of water, and this can save considerable amounts of water per household.
- 3. Pollution** – initiatives designed to reduce pollution include reducing the amount of waste produced and using materials such as non toxic paints.
- 4. Materials** – using recycled materials and timber from sustainable forests.
- 5. Transport** – how will people get around the new development? Developments should be near to good public transport routes or include new bus routes, pedestrian and cycle paths.
- 6. Wildlife** – such as badgers, bats and great crested newts that may live around a development need to be carefully protected. This may include re-homing or creating new habitats.
- 7. Health and Well-being** – external elements such as green spaces, existing wildlife, and security should be considered on the outside of the new house, and internal factors like natural lighting, internal space, and good indoor air quality should be considered on the inside of the new house.

New homes may be assessed against these seven areas and then rated on a scale of pass, good, very good or excellent.

Eco thinking



Activity 2

Elements of an eco house

- **COMPLETE** the table on Resource sheet 3, detailing which eco area is covered by the ideas listed. Some eco areas may fit more than one idea.

Resource sheet 3: Eco-house ideas

Eco house ideas	Which of the 7 eco areas?
Environmentally friendly white goods such as fridges, freezers, washing machines and dishwashers should have at least an A rating (proving they are energy efficient).	
Lighting throughout the home should be low energy.	
Good access to public transport.	
Provision of cycle storage (to encourage residents to use bicycles instead of the car).	
Some of the timber used should be recycled, the greater the amount the more points scored.	
Storage space for recyclable waste both inside and outside the house to recycle things like plastic and paper.	
Homes should have windows and enough light in the kitchen and living spaces with a view of the sky in all rooms.	
Homes should have a space to allow residents to enjoy their surroundings, such as gardens, communal areas, play areas etc.	

Points available: you can collect up to 8 eco points for this activity (1 point per eco idea)

A day in my life



Activity 3

- **THINK** about the activities you do each day, and the changes you could make to help the environment.
- **LIST** the changes you could make to help the environment.
Examples include:

“I came to school by car as usual”

change to

“This morning I cycled to school”

“I left the house in a rush”

change to

“As I left the house I checked that I had turned all the lights out”

“Mrs Smith went to the staffroom to make a cup of tea”

change to

“In the staffroom Mrs Smith boiled just the right amount of water for one cup of tea”

Points available: each change you can think of will earn you 1 eco point. Can you reach the maximum 10 eco points?

What a load of rubbish



Activity 4

What can we do to help?

Although the Government has set targets for local authorities, schemes across the country vary.

Here are examples of some of the schemes which can help reduce the amount of waste we produce:

- **Home composting**
- **Kerb side recycling schemes, for example newspapers and plastics**
- **Use composted and recycled goods**
- **Bottle banks and clothing banks for recycling**
- **Government incentives to reward households who recycle**
- **Purchase goods with less packaging**
- **DISCUSS** the importance of waste reduction and recycling with your team. Using Resource sheet 4, 'What a load of rubbish', produce a PowerPoint presentation to encourage people to recycle.
- **PRODUCE** a poster on recycling, using the information in your presentation, that could be sent out to all residents at a local development.

Points available: You can earn up to 20 eco points in this activity – 10 for your presentation and 10 for your poster.

Resource sheet 4: What a load of rubbish

When it comes to household waste, the numbers can be shocking! The Government estimates that:

- 28 million tonnes of waste are produced every year in the UK
- We each produce seven times our own body weight in household waste!
- By 2020 it will cost us £1.6 billion a year to manage our household waste
- Only around 10% of the UK's household waste is recycled, compared to almost 50% in Germany and the Netherlands
- Almost half of our household waste ends up in landfill sites

All this waste has a huge and damaging impact on the environment. Landfill currently produces up to 25% of all UK methane – a greenhouse gas that's 21 times more powerful than carbon dioxide.

The Government has introduced targets for all local authorities for the recycling and composting of household waste – designed to meet European laws and avoid fines of up to £180 million per year!

Taylor Wimpey is particularly proud of its comprehensive approach to waste and resource use that has seen construction waste sent to landfill reduced by 74% per home completed since 2007.

Recycle challenge



Activity 5

- **BRING** one item of household rubbish per team member into school. Turn the items into something useful!
- **PRESENT** your ideas of how to recycle your item to the class.
- **VOTE** for the team with the best recycling ideas.

Points available: you will earn 10 points for making and presenting your ideas. The winning team will be awarded 10 bonus points!

Wildlife study



Activity 6

Homes for wildlife

This is largely a cooperative activity and so the points will be awarded to all or none! A local wildlife group representative may be able to help you with this task.



- **VISIT** a local housing development and take a look at the environment around you. Record all the different types of wildlife you see, including plants, animals and birds. Look for and record any potential for wildlife nearby. Are there any wildlife habitats in sight? Look for trees, ponds, hedges etc.
- **CONSIDER** how wildlife could be further encouraged onto the development. Write a suggestion leaflet for new residents on how they could help with this.

Points available: 10 eco points

- **PLAN** a nature walk. Back in the classroom, study an Ordnance Survey map showing the development and its surrounding areas. Produce a simple Nature Trail for residents to enjoy. Include any details of natural interest. You will need to actually follow your planned route and take notes as you go round.

Points available: 10 eco points

- **WORK** together as a class to create a display entitled 'Wildlife in Your Area'. Use all the information you have collected and produced.

Points available: 20 eco points

Teachers' notes

Links to the National Curriculum

Activity 1

Art and design: improve their mastery of art and design techniques; **D&T:** perform practical tasks, investigate and analyse products, evaluate their ideas and products, consider the views of others to improve their work; **Reading:** retrieve, record and present information from non-fiction.

Activity 2

Reading: retrieve, record and present information from non-fiction.

Activity 3

Spoken language: articulate and justify answers, arguments and opinions, use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas.

Activity 4

Computing: Use search technologies effectively, use and combine a variety of software and a range of digital devices and create a range of... content that accomplish given goals, including collecting, analysing, evaluating and presenting data; **D&T:** generate, develop and model; **Geography:** describe and understand key aspects of... human history; **History:** study of an aspect of social history, address and sometimes devise historically valid questions; **Reading:** retrieve, record and present information from non-fiction.

Activity 5

Art and design: improve their mastery of art and design techniques; **Computing:** use search technologies effectively; **D&T:** perform practical tasks, investigate and analyse... products evaluate their ideas and products... consider the views of others to improve their work.

Activity 6

Computing: Use search technologies effectively, use and combine a variety of software and a range of digital devices and create a range of... content that accomplish given goals; **Geography:** use maps... and digital/computer mapping; **Reading:** retrieve, record and present information from non-fiction; **Science:** describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics; **Spoken language:** articulate and justify answers, arguments and opinions, use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas; **Writing:** plan, draft, evaluate, edit; proof-read.

Teachers' notes

Links to the Scottish Curriculum for Excellence

Activity 1

Literacy: 2-15: “can make notes, organise them under suitable headings and use them to understand information, develop my thinking”; **Expressive arts:** 2-02a: “have the opportunity to choose and explore an extended range of media and technologies to create images and objects, comparing and combining them for specific tasks”; 2-04a: “Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail”; 2-06a: “I can develop and communicate my ideas, demonstrating imagination and presenting at least one possible solution to a design problem.”

Activity 2

Literacy: 2-15: “can make notes, organise them under suitable headings and use them to understand information, develop my thinking.”

Activity 3

Literacy: 2-15: “can make notes, organise them under suitable headings and use them to understand information, develop my thinking, explore problems and create new texts, using my own words as appropriate.”

Activity 4

Literacy: 2-15: “can make notes, organise them under suitable headings and use them to understand information, develop my thinking, explore problems and create new texts, using my own words as appropriate”; **Expressive arts:** 2-06a: “I can develop and communicate my ideas, demonstrating imagination and presenting at least one possible solution to a design problem”; **Technologies:** 1-04b/2-04b: “I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways.”

Teachers' notes

Activity 5

Expressive Arts: 2-02a: “have the opportunity to choose and explore an extended range of media and technologies to create images and objects, comparing and combining them for specific tasks”; 2-04a: “Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail”; 2-06a: “I can develop and communicate my ideas, demonstrating imagination and presenting at least one possible solution to a design problem”; **Technologies:** 2-01a: “When exploring technologies in the world around me, I can use what I learn to help to design or improve my ideas or products”; 2-14b: “Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback.”

Activity 6

Literacy: 2-15: “can make notes, organise them under suitable headings and use them to understand information, develop my thinking, explore problems and create new texts, using my own words as appropriate”; 28a: “convey information, describe events, explain processes or combine ideas in different ways”; 2-29a: “persuade, argue, explore issues or express an opinion”; **Expressive Arts:** 2-02a: “have the opportunity to choose and explore an extended range of media and technologies to create images and objects, comparing and combining them for specific tasks”; 2-04a: “Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail”; 2-06a: “I can develop and communicate my ideas, demonstrating imagination and presenting at least one possible solution to a design problem”; **Social studies:** 2-08a: “discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally-responsible way”, 2-08b: “consider the advantages and disadvantages of a proposed land use development and discuss the impact this may have on the community”; 2-14a: “To extend my mental map and sense of place, I can interpret information from different types of maps and am beginning to locate key features within Scotland, UK, Europe or the wider world”; **Technologies:** 1-04b/2-04b: “I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways.”

Teachers' notes

Links to the National Literacy and Numeracy Framework for Wales (NLNF) and other areas of the Welsh national curriculum

Activity 1

Art and design: pupils should be stimulated and inspired, where appropriate, by images and artefacts from a variety of historical and contemporary cultures and contexts. Pupils should investigate:

- the properties of materials and processes
- natural objects and environments
- made objects and environments
- imagined objects and environments.

They should, where appropriate, apply to their own work findings collected from a variety of contexts including different cultures and periods;

D&T: pupils should be given opportunities to develop their design and technology capability through tasks in which they learn about the responsible use of materials, considering issues of sustainability. Pupils should be given opportunities to develop and communicate their design ideas in a variety of ways, using ICT and models where appropriate;

Reading: locating, selecting and using information.

Activity 2

Reading: locating, selecting and using information.

Activity 3

Oracy: developing and presenting information and ideas; **Speaking:** express issues and ideas clearly, using specialist vocabulary and examples, speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested; explore challenging or contentious issues through sustained role play; **Listening:** listen carefully to presentations and show understanding of the speakers' conclusions or opinions, respond to others with questions and comments which focus on reasons, implications and next steps; **Collaboration and discussion:** contribute purposefully to group discussion to achieve agreed outcomes, follow up points in group discussions, showing agreement or disagreement giving reasons.

Teachers' notes

Activity 4

Reading: Locating, selecting and using information; **Reading strategies:** use a range of strategies for finding information; read closely, annotating for specific purposes; use internet searches carefully, deciding which sources to read and believe.

Art and design: pupils should investigate:

- the properties of materials and processes
- natural objects and environments
- made objects and environments
- imagined objects and environments.

ICT: find information from a variety of sources for a defined purpose.

Activity 5

Art and design: pupils should be stimulated and inspired, where appropriate, by images and artefacts from a variety of historical and contemporary cultures and contexts. Pupils should investigate:

- the properties of materials and processes
- natural objects and environments
- made objects and environments
- imagined objects and environments.

D&T: pupils should be given opportunities to develop their design and technology capability through tasks in which they learn about the responsible use of materials, considering issues of sustainability. Pupils should be given opportunities to develop and communicate their design ideas in a variety of ways, using ICT and models where appropriate; Pupils should be given opportunities to measure, mark out, cut, shape, join, weigh and mix a range of materials and ingredients, using appropriate tools/utensils, equipment and techniques; **Designing:** Pupils should be given opportunities to develop a simple specification/recipe for their products indicating their intentions and approach; **Making:** Pupils should be given opportunities to discuss their products, and evaluate their work, e.g. explain why and how they made their product and what they think about its function, features, performance, taste.

Teachers' notes

Activity 6

Oracy: developing and presenting information and ideas; **Speaking:** express issues and ideas clearly, using specialist vocabulary and examples, speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested; explore challenging or contentious issues through sustained role play; **Listening:** listen carefully to presentations and show understanding of the speakers' conclusions or opinions, respond to others with questions and comments which focus on reasons, implications and next steps; **Collaboration and discussion:** contribute purposefully to group discussion to achieve agreed outcomes, follow up points in group discussions, showing agreement or disagreement giving reasons.

Reading: locating, selecting and using information; **Reading strategies:** use a range of strategies for finding information; read closely, annotating for specific purposes; use internet searches carefully, deciding which sources to read and believe.

Geography: Locating places, environments and patterns. Pupils should be given opportunities to identify and locate places and environments using globes, atlases, and maps, e.g. use co-ordinates and four-figure references, and follow directions, estimate and calculate distances, e.g. follow map and ground routes, calculate map-to-ground distances.

Investigating: pupils should be given opportunities to measure, collect and record data through carrying out practical investigations and fieldwork, and using secondary sources, e.g. use instruments to measure rainfall, use GIS, design questionnaires.

Science: make careful observations and accurate measurements, using digital and ICT equipment at times.