

# CONSTRUCTION BOX 2:

## Building a Beautiful Bug Hotel

a blended learning activity for  
primary aged children at home  
or in school, developed by

NASCENT



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Connections, Qualifications  
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## **AN INTRODUCTION TO THE CONSTRUCTION BOXES:**

Over the last few years, scientists at West Suffolk College have been developing “science boxes” for primary schools, to ensure that children of all ages get to do practical, hands-on science throughout their school life. In response to these unusual times, since March 2020 the science boxes have been adapted to be used for “blended learning” this means they are now suitable not just for schools but also for carrying out in the home, they became “virtual” science boxes.

We are now delighted to begin providing virtual Construction Boxes: using the same simple, easy to read portfolio format with concise instructions, curriculum links and further guidance pathways.

Unlike science, construction is not a part of the primary curriculum, however practical construction projects such as this do encompass many areas of the curriculum such as numeracy and mathematics, language and literacy, science and working scientifically, art and design.

While all the construction box projects can be carried out by a single child, they are designed for groups giving pupils the opportunity to collaborate in a work-like project where a variety of skill sets are needed.

This is the “portfolio” and it contains all the information needed to carry out the activity at home or in school. Where appropriate, notes for non-teachers such as parents and carers are highlighted in yellow to further support home delivery.

## SUMMARY:

This is a simple summary of the activity and what the children are going to be learning about

### What is a bug hotel?

A bug hotel, also known as an insect hotel, is a manmade structure to provide a place of refuge and safety for smaller bugs, minibeasts or to give them their correct name invertebrates in a garden or any outdoor space.

The children are going to build a “bug hotel” using readily available materials.

They will need to think about the natural habitats that bugs would live in, like the pile of leaves and sticks shown here on the right →



We want our bug hotel to be beautiful too, something that appeals to humans to look at and enjoy as well as being a home for insects and minibeasts, a piece of artistic sculpture, more like the bug hotel shown on the left here ← that could simply be purchased online.



We don't want to buy something, we want to design something ourselves constructed from recycled materials that children and families have found around their homes and gardens. Perhaps someone has an old bookcase or cabinet that could be “up-cycled” or rather “bug-cycled”.

This activity is intended to encourage the children to think about sustainable construction as well as the marriage of design and construction.

There are many designs for bug hotels, a simple Google image search will show that. This portfolio details how to make a simple, robust one without the need for too much adult intervention, and is based around the example provided by the RSPB REFERENCE:

<https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/build-a-bug-hotel/>



## Why build a bug hotel?

REFERENCE: <https://schoolgardening.rhs.org.uk/resources/project/make-a-bug-hotel>

In natural habitats there are endless nooks and crannies where bugs or mini-beasts, properly known as invertebrates, can shelter.

Crevices in bark, holes in dead wood, piles of fallen leaves, gaps between rocks, hollow plant stems, spaces in dead logs – all these can provide a home for the myriad small creatures that need somewhere to nest or to escape from predators or bad weather.

Established gardens and the outdoor space around your school can also provide lots of hiding places, but we like to keep our outside spaces tidy and this might mean that we clear away the debris where invertebrates might live. Also, many schools have lots of hard surfaces, like the playground and so the amount of natural habitat suitable for minibeasts/bugs or more correctly invertebrates may be limited.

We can help provide more invertebrate homes by creating bug hotels, and by designing them to be interesting and attractive creations we make sure our precious outdoor spaces, at school or at home, remain looking tidy.



## KIT LIST:

This page describes all the "kit" that you'll need, as well as any hazards that may arise from using it... in other words, what you're going to need and what to be careful about

### You will need?

#### 1. The Frame

The frame could be purpose made with the help of an adult, or you might chose to use old wooden pallets an old cabinet or bookcase. Consider the space you have available and where you intend to place your bug hotel; if space is no object then you could use a stack of pallets, but if space is limited an old bathroom cabinet or bookcase could be wall mounted.

#### 2. Bedding and Nest Materials

These should be natural materials, such as

- Logs, sticks and wood
- Straw and hay
- Moss
- Dry leaves
- Woodchips
- Old terracotta pots
- Old roofing tiles
- Bricks, preferably those with holes through them
- Bark
- Pine cones
- Sand
- Soil
- Hollow bamboo canes
- Dead hollow stems cut from shrubs and herbaceous plants

#### 3. Roofing Materials

Think about how you are going to keep your bug hotel guests dry, they won't mind a bit of damp, but they will not want to get wet, you might use

- An old sheet of roofing felt
- Planks of wood
- Old roofing tiles

### Potential Hazards

Children should be careful when carrying bricks, logs and wood as they may cause injury when dropped. Wood may also give rise to splinters. Dried leaves and grass may contain thistles or brambles. The use of gardening gloves is encouraged, and adult supervision will be required, particularly when constructing or wall mounting the frame and if using cutting equipment.

## ACTIVITY OUTLINE:

### 1. Decide where to position your bug hotel:

Before starting work on the construction, children must consider where they are going to position the bug hotel. This will very much depend on the space available in a large space an almost shed like structure could be constructed, however in a smaller garden or school playgrounds it may be more suitable to opt for a wall mounted design.

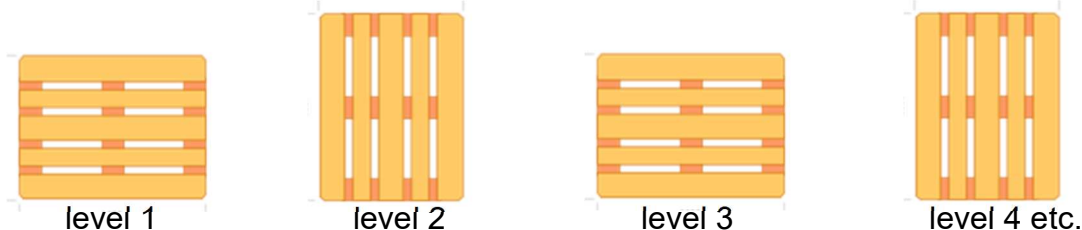
Ideally, the space should be:

- Quiet, try to choose an area that can be left undisturbed, but it is more important that the site is....
- .... shady, many although not all invertebrates prefer dark shady spots.
- If you are building your bug hotel on the ground make sure the surface is level, the invertebrates won't mind an uneven floor, but your structure will be more stable if the ground is flat.

### 2. Design your bug hotel:

This will depend on the materials you have to hand and again the positioning, some things to think about are:

- If you have a larger space and several pallets, they could be neatly stacked, try to alternate the direction of the slats to make discrete "rooms" for the various types of invertebrate



- If you are creating a wall mounted structure consider the height (will all pupils be able to observe it), the depth (does it protrude from the wall too far on an area where people might bump into it).
- Will it be strong enough? If you are "up-cycling" and old bookcase or cabinet will it be strong enough to take the weight of some of the bedding and nesting materials you have chosen? Slugs and snails love old terracotta pots and bricks, but these are heavy.

### 3. Populating the "Rooms":

Again, this will depend on the materials you plan to use, but it is important not to make your structure top heavy as it may become unstable, so fill the lower "rooms" with the heavier materials such as bricks, broken terracotta pots and stones.

Remember to leave space for the occupants, the invertebrates, to get in and make their homes, so don't pack in soft materials (like hay, straw, dried leaves or grass) too tightly.

Avoid the temptation to provide your bug hotel guests with food waste, it is not necessary and while it may attract some minibeasts, it may also attract rats and mice.

### Get Creative!

As well as the shape of the frame, the positioning of the materials is an opportunity to get creative, you can make different designs using the different shaped materials arranged in blocks or patterns.

Hand drills are relatively inexpensive (around £15 online) and can be used by the children to drill holes into larger logs making perfect habitats for many minibeasts, the holes might be used to spell out the name of the school or make patterns.



### 4. Add the roof:

Remember the roof. This might be a piece of roofing felt, roofing tiles or you may even be lucky enough to know a thatcher, but whatever you choose to use the roof is important as minibeasts will want to keep dry.

### 5. Observe:

Your bug hotel is now ready for “guests”, but the minibeasts will probably take a little while to arrive. It is best to leave it undisturbed for a couple of months, after which time you can carefully lift the various materials to see if any invertebrates have made their home there. The woodland trust offers a useful guide to which invertebrates you might find in which material at

<https://www.woodlandtrust.org.uk/blog/2019/09/how-to-build-a-bug-hotel/>

## CROSS-CURRICULAR LINKS:

Construction is not part of the primary curriculum, but as described in this brief list, it links many core areas

### Numeracy and mathematics:

The building materials can be counted, measured and calculations made as to quantity and overall dimensions made depending upon the ability of the pupils.

### Language and literacy:

When evaluation of the building materials is being considered reference might be made to the popular fairy tale “The Three Little Pigs”.



**Science:**

An investigation into the natural habitat of invertebrates and for older children discussion around populations and the relationship to habitat and natural predators.

**Art and design:**

While the invertebrates will not be concerned with aesthetics, the humans around might be, how can the children design the bug hotel and arrange the materials in such a way that it looks pleasing to humans but is still functional for its occupants, in other words how might they design a beautiful bug hotel.

**FIND OUT MORE: USEFUL LINKS**

These links of short videos and written resources should help you and your children understand more about the construction box activity

WEB RESOURCE: The national curriculum in England Key stages 1 and 2  
The entire national curriculum for primary schools as a PDF or Word Document  
<https://www.gov.uk/government/publications/national-curriculum-in-england-primary-curriculum>

WEB RESOURCE: The RSPB Insects and other Minibeasts  
<https://www.rspb.org.uk/birds-and-wildlife/advice/gardening-for-wildlife/insects-and-minibeasts/>

WEB RESOURCE: Guide to materials you might use and which minibeasts like what  
<https://www.woodlandtrust.org.uk/blog/2019/09/how-to-build-a-bug-hotel/>

WEB RESOURCE: The RHS Campaign for School Gardening bug hotel project  
<https://schoolgardening.rhs.org.uk/resources/project/make-a-bug-hotel>

WEB RESOURCE: A small bug hotel for balconies and areas where space is limited  
<https://schoolgardening.rhs.org.uk/Resources/Activity/Make-a-simple-bug-or-ladybird-home>

WEB RESOURCE: A Key Stage 2 worksheet to teach the classification of invertebrates  
<https://live.newscientist.com/media/KS2---Activity-at-School---Classification-of-Invertebrates.pdf>



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