

AN INTRODUCTION TO **ARCHITECTURE**

MAKING A BUG HOUSE **KS1**

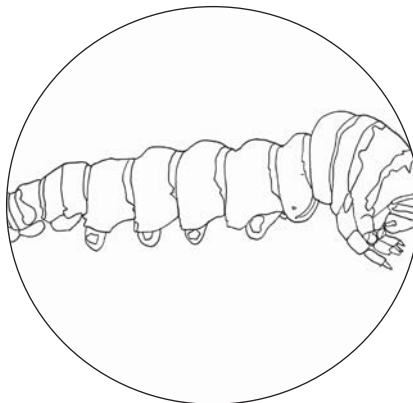
Created by Bethany Hastings at The Welsh School of Architecture

OVERVIEW

This 'Introduction to Architecture' pack contains a range of resources, recommendations and lesson activities to be delivered in the classroom environment to Reception and Key Stage 1 learners (Ages 4-7).

The pack is focused around the task of creating a bug house using recycled materials, which allows children to begin to understand architecture within the context of designing for small animals rather than people.

We hope that through this fun and exciting task, children will become acquainted with architecture. We intend that through designing something for a specific purpose, by learning about the needs of specific bugs and applying them to their design, learners' creativity and problem solving abilities will be built upon. The lesson plan also aims to build upon numeracy and literacy skills through a number of worksheets with writing and drawings tasks, which can be found in our section of supporting resources.



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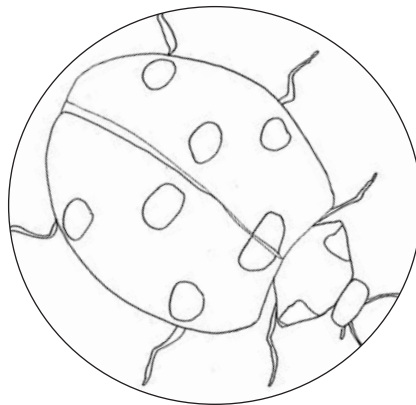
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AIM

The main aim of this activity is to encourage children to develop their creativity and problem solving skills through the challenge of creating a house for bugs, whilst introducing architecture as a profession.

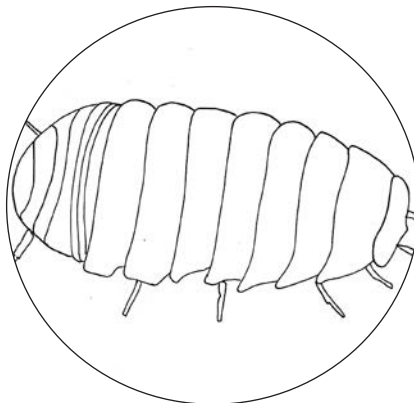
The main outcome of this project will be a life sized bug house for a specific species, which is constructed from recycled and re-used materials and which can be inhabited in the outside environment.



OBJECTIVES

Learners should be able to:

- Understand what an architect does and their role
- Learn about different types of bugs, what they need to survive, their natural habitats and the natural world
- Create a bug house which offers a permanent or temporary shelter for the bug
- Review the bug houses and the construction process through a selection of writing tasks and exercises



NUMERACY SKILLS

RECEPTION

YEAR 1

YEAR 2

Following instructions successfully

Understanding comparative measurements and weights of respective bug houses

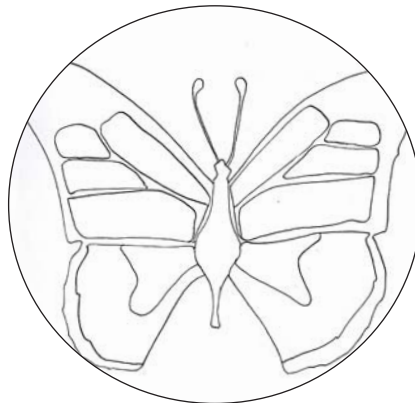
Counting large numbers and learning how to record collected data

Measuring lengths using standard or non-standard units

Sorting and classifying objects

Using the tally chart children will learn how to group numbers into 5s and improve their understanding of sorting, collecting and representing data

Measuring lengths using standard units



LITERACY SKILLS

RECEPTION

YEAR 1

YEAR 2

Copying words
and learning how
to compose simple
sentences

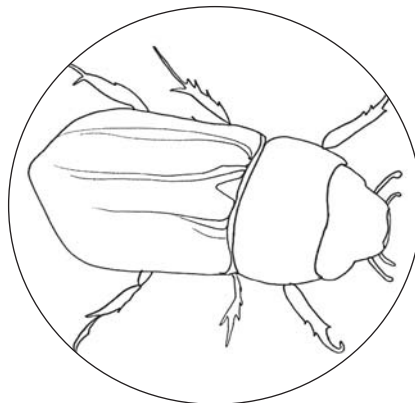
Learning new words such as 'architect' and
'design'

Expressing a sequence of events, improving
descriptive writing and communication
through writing tasks (see worksheets in
supporting resources)



CREATIVITY AND AWARENESS SKILLS

- Designing something for a particular use, in response to a specific user and its needs
 - Use of creativity and imagination
- Fine motor skills, improved by cutting, drawing and sticking
- Attention to detail and use of pen and pencil through drawing
- Awareness of the value of recycling and re-using materials
- Awareness of insects and the natural world, helping learners to enjoy and care for the environment



STAGE 1
WHO IS AN ARCHITECT?

Does the class know who an architect is and what they do?

A simple play activity of making buildings using building blocks, bricks or duplo might introduce architecture to the class in a simple and clear way.

A straightforward definition might be 'An architect designs buildings', or 'An architect makes buildings'. The words 'architect', 'design' and 'building' may be added to the learner's vocabulary through the use of a word bank or definition sheet.

Introduce the bug house making activity using the phrases:

'An architect makes buildings, such as houses, schools and hospitals, for people'

'We are going to make a house for bugs, just like an architect makes houses for people'



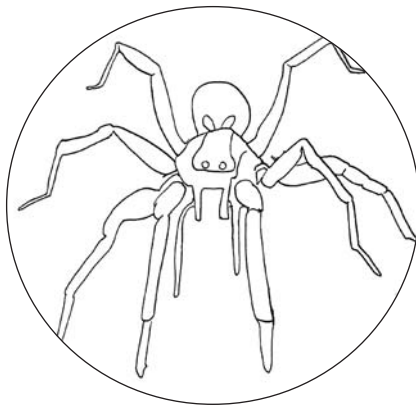
STAGE 2
BUG HUNT

Take the class outside, to the school playground or garden, and encourage learners to search for all types of insects! Learners can look for bugs in the grass, concrete, in bushes or up trees, allowing them to think about the different habitats of bugs.

Using the 'Bug Hunt' worksheet (pp. 54-55) learners will record the number of each different type of insect they find, grouping numbers into 5 using the tally chart, and filling in the table.

Younger learners may record numbers by making a mark for each insect they find, or drawing a picture for each insect they find, and then counting the results back in the classroom.

In numeracy lessons, the data from the bug hunt can be presented in bar charts and pictograms, and analysis of the data can be carried out. Questions such as 'Which bug is the most common?' or 'How many more ants are there than woodlouse?' are useful in involving addition and subtraction.



STAGE 3
LEARNING ABOUT BUGS

In the classroom, ask what learners already know about the different types of bugs, considering what they might have learnt about habitats during the bug hunt. Useful websites can be found on page 18, which can be used to inspire the class and build on their knowledge.

Remind the class that they will be making a bug house! Allow the children to choose their favourite bug to design a house for and learn more about. The 'Bug Factfile' worksheets (pp. 56-66), of which there are 10 different types, may be used for each learner to fill in a factfile for their chosen bug.

For older KS1 learners the bug fact file may be set as a research homework activity to be written up in lesson time. Furthermore, the question on the bug factfile: 'How big am I?', might be an opportunity for learners to get to grips with measuring in cm and mm, through researching or measuring average lengths of the bug in standard units.

For younger learners, the theme of bugs might also be conveyed through a story, or linked to reading activities if appropriate. A list of popular bug related story books can be found on page 19.



STAGE 4
MAKING THE BUG HOUSE - MATERIALS USED

Children may bring used packaging and recycling from home to create their bug houses:

- Egg Boxes
- Cereal boxes
- Cardboard/corrugated cardboard
- Plastic bottles
- Milk bottles

Other materials used for the activity:

- Coloured straws
- Sticks (Willow Roll Edging £1 from Poundland)
 - Plastic cups
 - Coloured pipe cleaners
 - Coloured paper and card
 - Coloured pens (non-toxic)
 - Selotape and scissors

As a possible starting activity, children might sort out the materials they collected as a class. Encourage the class to think about the properties of each material. For example, sort materials into groups according to rigidity or texture.

STAGE 4
MAKING THE BUG HOUSE - PROMPTING

Show the class pictures of existing bug houses made of recycled materials (p. 17), to inspire their design and creative process. Remind the class that they are designing their house for a specific type of bug and help them to make their creation in such a way that responds to the needs of their bug, using their bug factfile as a reference.

The following questions will prompt the children's decision making before they begin:

- What type of bug is your bug house for?
- What does your type of bug eat and where does it nest?
 - Where will your bug eat and nest in your house?
 - How will the bug get in and out?
 - How big will the 'doors' be - How big is your bug?
- How many 'windows' and 'doors' will you have in your house?
 - What colour do you want the bug house to be?
 - Do you want your house to blend in or stand out?
- Which piece of re-used material do you want to use?
 - What shape do you want your bug house to be?
 - How big do you want your bug house to be?

STAGE 4
MAKING THE BUG HOUSE - PROCESS

- 1** Let each child pick one piece of material to make their house with, such as one egg box or one plastic cup each
- 2** Children may cut holes out of the material to make openings for 'windows' and 'doors'
- 3** Children may fill their bug house with straws/sticks or attach them using selotape in order to create a place for bugs to hide and nest in. Closing off one end of the tube is a helpful technique to attract bugs
- 4** Children may also use rolled up paper or pipe cleaners to create nesting places or 'beds' for their bugs
- 5** Children may use sticks or straws to create pathways, bridges or ramps for their bugs
- 6** Children may then decorate their bug houses using paper, card or drawings
- 7** As a literacy exercise, younger learners may write the name of their chosen bug and the word 'house' onto their bug house

Some children may require little or no direction when starting to make their bug house, but some may require step-by-step direction which can be followed as a class. This activity can be as broad or as prescriptive as appropriate.

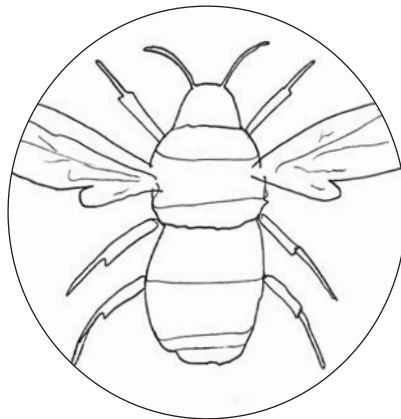
See pages 21-44 for case studies with different design approaches which can be adopted for a step-by-step process.

STAGE 5
REVIEW

Learners will use the 'Bug Worksheets' for colouring-in and writing exercises, including sketching the completed bug house, describing it and describing how they made it. Please note, there are 3 different formats of the Bug Worksheets, each of which is aimed at different levels of ability and age with slightly varying questions and activities. These can all be found on pages 67-80.

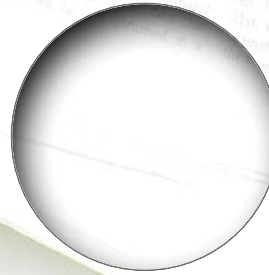
Improve learners' understanding of capacity, size and weight by comparing and measuring each bug house. Put houses in order of size/weight as a group, and encourage learners to use phrases such as 'longer than' or 'heavier than' to compare them.

Finally, the children may take their bug house home and put it in their garden. Alternatively, take the class outside and find suitable locations for the bug houses to be situated in the school grounds.



SUPPORTING RESOURCES

MAKING A BUG HOUSE KS1



REFERENCES

A selection of weblinks with interesting images of bug houses and further step-by-step guides, which may be used to inspire and inform the creative process:

http://www.ecokids.ca/pub/take_action/campaigns/act_for_the_planet_2013/en/act_for_the_planet/assets/pdfs/bug-individual.pdf

A guide aimed at children about making simple bug houses, from a sustainability point of view

<http://www.bbcwildlife.org.uk/sites/birmingham.live.wt.precedenthost.co.uk/files/Insect%20Hotel.pdf>

A guide to making a larger structure, but with useful tips on natural nesting and filling material, which may be used as an alternative to straws, pipe cleaners and cardboard

<http://open-city.org.uk/images/pdfs/AISpri14%20Awards%20Programme.pdf>

A document containing images regarding a competition aimed at Primary Schools in London, where children were asked to design houses for birds, bats, bees, or bugs

<http://www.daviddomoney.com/wp-content/uploads/2014/08/David-Domoneys-Complete-Guide-to-Making-Your-Own-Insect-Hotels.pdf>

Includes step-by-step guides to making simple bug houses using bamboo canes, rolled cardboard and plastic bottles

Weblinks containing extension activities and ideas for alternative lesson plans:

<http://www.socreativethings.com/how-to-make-birds-house-using-milk-jugs-and-cartoons/>

This article contains a step-by-step guide of how to make bird houses out of drinks cartons

<http://www.lushome.com/25-recycled-crafts-smart-recycling-ideas-making-cheap-bird-feeder-designs/108838>

Regarding making bird houses using recycled materials, this article contains many inventive ideas and interesting images of up-cycled unwanted objects

REFERENCES

A selection of educational resources which can be used as teaching materials:

<http://www.primarytreasurechest.com/topics/animals/minibeasts.html>

Includes many lesson materials including word-matching activities, flashcards and an alternative bug hunting worksheet in Welsh and English

<http://www.bbc.co.uk/education/clips/zq3ygk7>

A 5 minute clip aimed at children explaining what makes an insect an insect, and describing what different types of insects there are

<http://www.opalexplornature.org/bugs-results-1>

A webpage showing the results of a bug count which aimed to find out the habitat of different insects

<http://www.outdoorlearningwales.org/home>

Outdoor Learning Wales is a national organisation which contains information, news and resources: most noticeably the 'Woodland Songbook', which can be found in the resources library and which contains songs about worms, bees and spiders

REFERENCES

STORY BOOKS



Bugs! Bugs! Bugs! - Bob Barner



Bob and Otto - Robert O. Bruel



The Grouchy Ladybug - Eric Carle



The Very Busy Spider - Eric Carle



The Very Hungry Caterpillar - Eric Carle



Diary of a Spider - Doreen Cronin



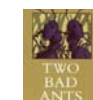
Beetle Bop - Denise Fleming



Miss Spider's Abc Book - David Kirk



Beetle McGrady Eats Bugs! - Megan McDonald



Two Bad Ants - Chris Van Allsburg



Buzz - Eileen Spinelli



I Love Bugs! - Phileomon Sturges

CASE STUDY

GRANGETOWN FESTIVAL

A 3 hour arts and crafts stall at the Grangetown Festival, June 2015, whereby local children had a go at making a bug house. A range of recycled materials were provided and the activity was fairly broad in order to allow the children to be as creative as possible, to test to see how much guidance and prompting was needed, and different construction techniques/designs children naturally used. Over the 3 hours, about 20 children visited our stall, from the ages of Reception - Year 7.

One of the most noticeable observations I made was the range of designs and innovation shown. All the children needed was an explanation of the activity and initial encouragement to pick up some materials and start working. I noticed that some children copied other children's design approaches as a starting point for their designs, showing the sharing of ideas.

Different design approaches observed:

- Using egg boxes
- Folding paper
- Folding cardboard
- Filling cups with materials making 'nests'
- Altering containers

HOUSES IN
EGG BOXES

GRANGETOWN FESTIVAL



Bug House made by KS1 learner

Photograph taken at Grangetown Festival, June 2015

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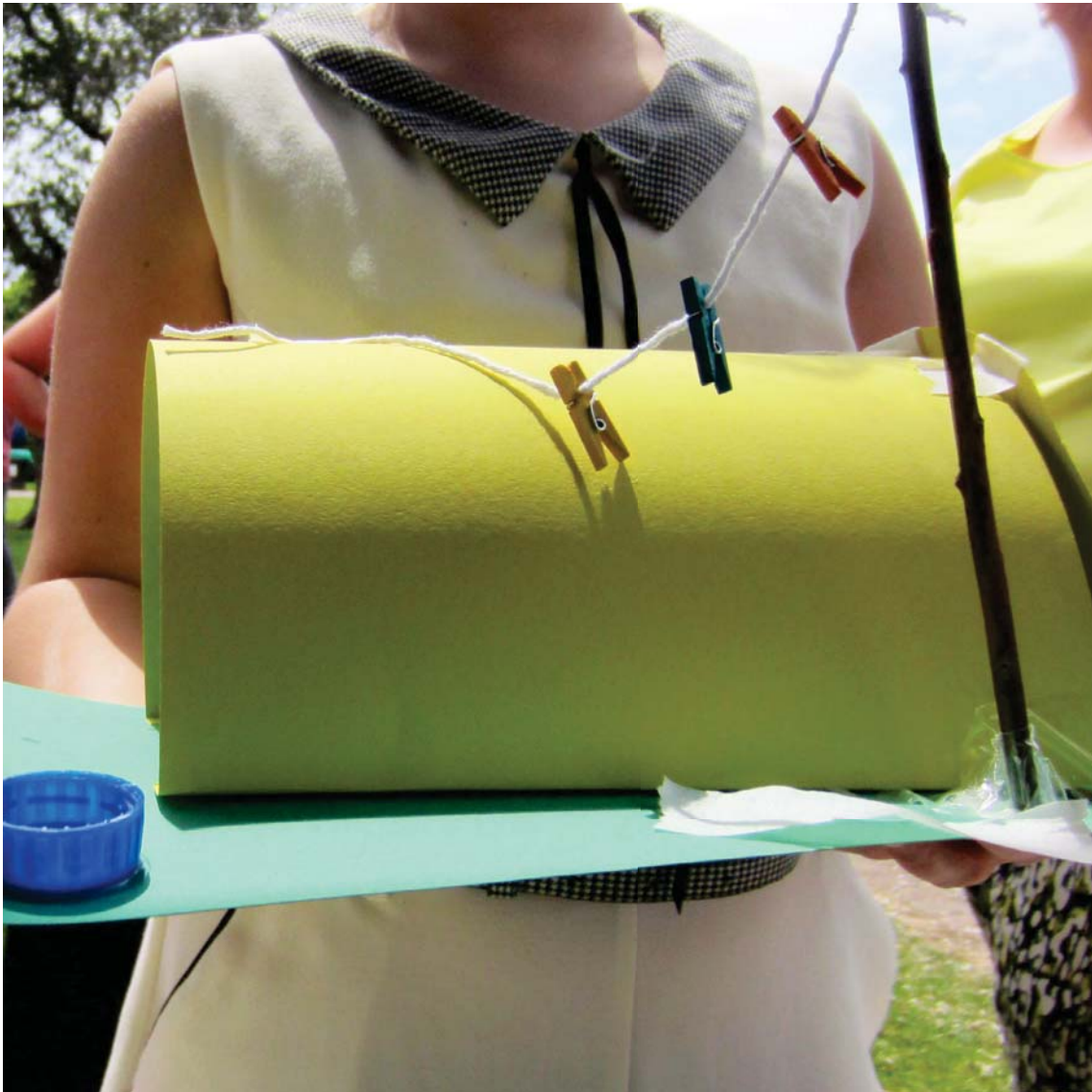
Bug House made by KS1 learner
Copyright © 2015 by Architecture
Photograph taken at Grangetown Festival, June 2015



Bug House made by KS1 learner
Copyright © 2015 by Architecture
Photograph taken at Grangetown Festival, June 2015

FOLDED PAPER HOUSES

GRANGETOWN FESTIVAL



Butterfly House made by Year 7 learner
Photograph taken at Grangetown Festival, June 2015



Butterfly House made by Year 1 learner
Photograph taken at Grangetown Festival, June 2015



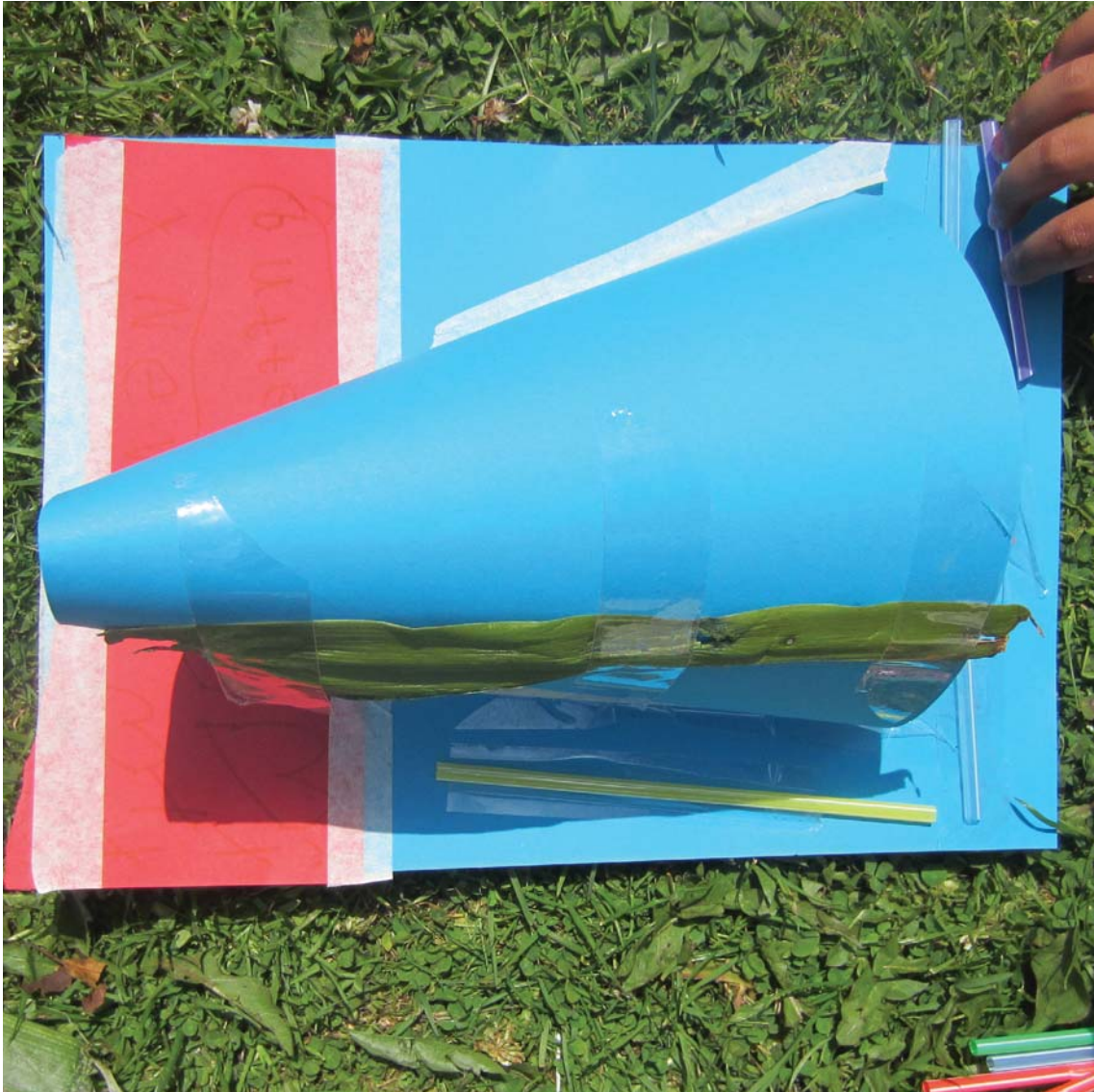
Butterfly House made by Year 1 learner
Photograph taken at Grangetown Festival, June 2015



Butterfly House made by Year 1 learner
Photograph taken at Grangetown Festival, June 2015



Butterfly House made by Year 1 learner
Copyright © 2015 by Architecture
Photograph taken at Grangetown Festival, June 2015



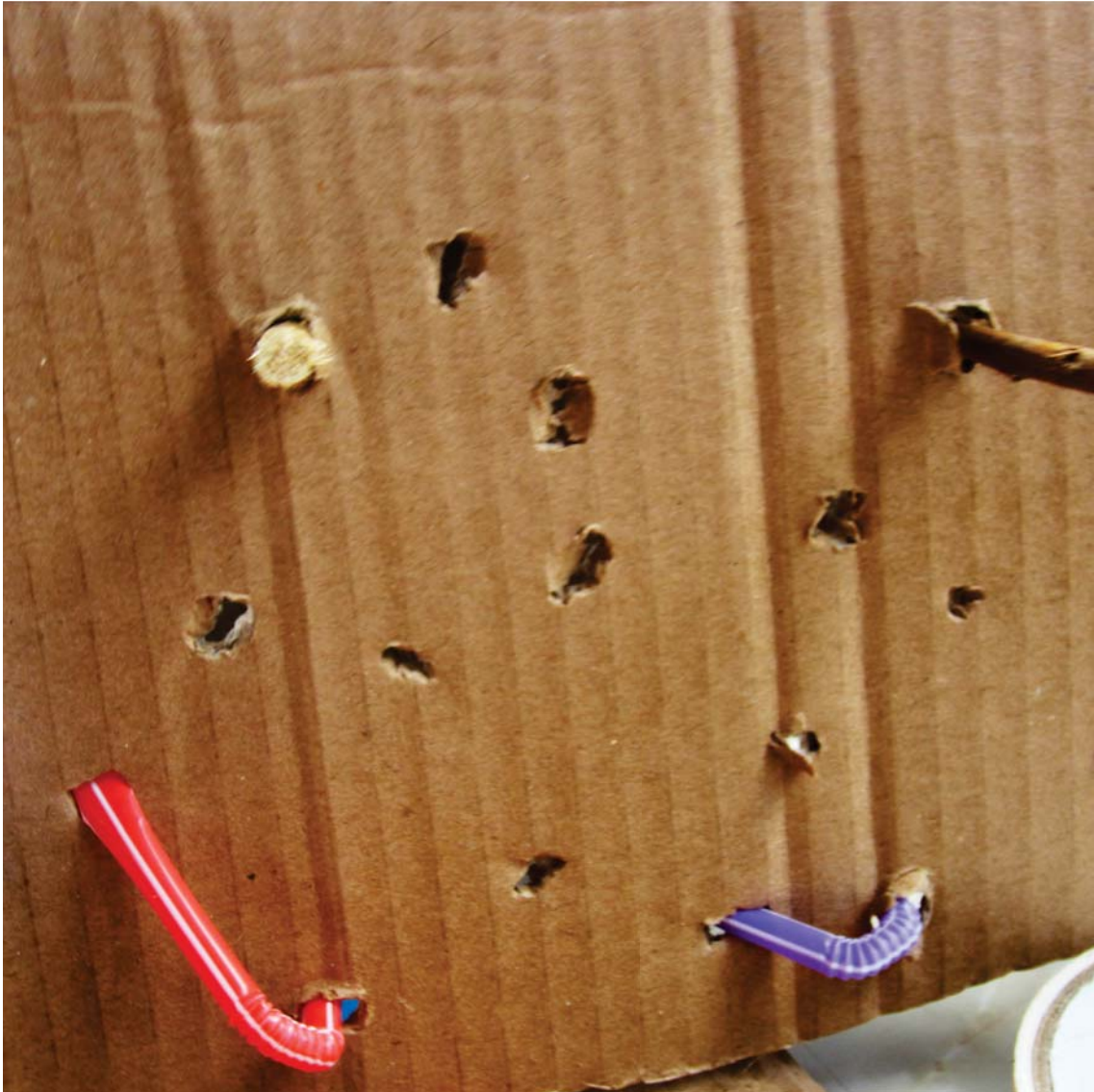
Butterfly House made by Year 1 learner
Photograph taken at Grangetown Festival, June 2015

FOLDED CARDBOARD HOUSES

GRANGETOWN FESTIVAL



Bug House made by Year 5 learner
Photograph taken at Grangetown Festival, June 2015



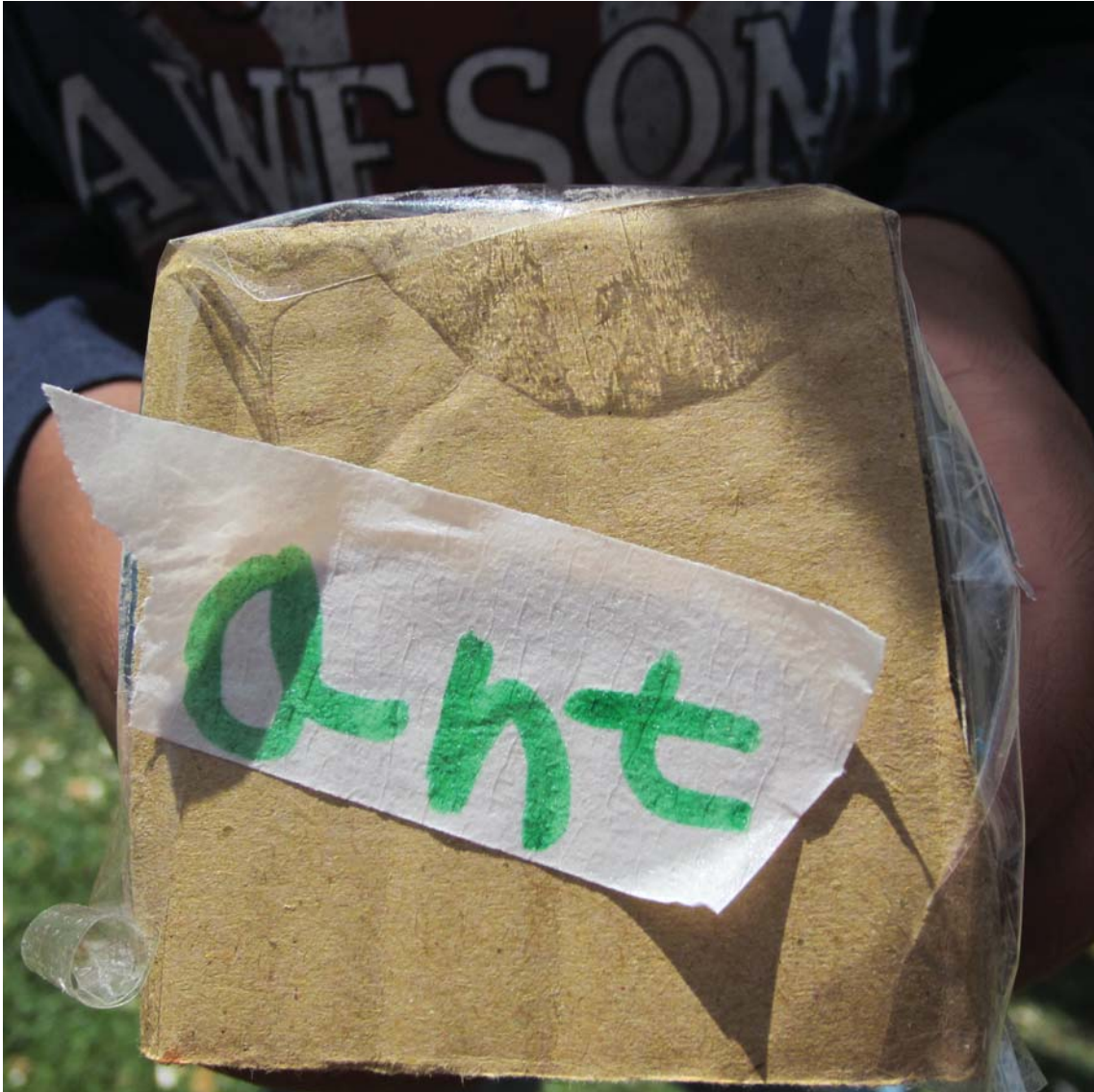
Bug House made by Year 5 learner
Photograph taken at Grangetown Festival, June 2015



Bug House made by Reception learner



Bug House made by Year 1 learner
Photograph taken at Grangetown Festival, June 2015



Bug House made by Reception learner
Photograph taken at Grangetown Festival, June 2015

HOUSES IN
PLASTIC CUPS

GRANGETOWN FESTIVAL



Bug House made by KS1 learner
Copyright © 2015 by Architecture
Photograph taken at Grangetown Festival, June 2015



Bug House made by Reception learner
Photograph taken at Grangetown Festival, June 2015



Bug House made by Year 1 learner
Photograph taken at Grangetown Festival, June 2015



HOUSES IN
CONTAINERS

GRANGETOWN FESTIVAL



Bug House made by KS1 learner
Copyright © 2015 by Architecture
Photograph taken at Grangetown Festival, June 2015

CASE STUDY

LOCAL CARDIFF PRIMARY SCHOOL

Small groups of about 5 children with 2 adult helpers engaged in making a bird house using re-used milk bottles and making a bug house using assorted re-used materials. The activities took place in the Reception class of a local Cardiff Primary School, and each craft activity took about 30-40 minutes.

Bird House Activity Process:

- 1** Gave each child one milk bottle

- 2** Showed the children my milk bottle bird house (a previously made example), asked if they knew what it was and asked if they ever see birds in their garden. Most children guessed they were making a bird house from the example I showed, and some recognised bird houses made of sticks and with a pitched roof

- 3** Showed pictures of birds and upcycled bird houses, including bird houses made of juice cartons and milk bottles, as well as conventional woodwork bird houses, in order to inspire and encourage children to begin their creations

- 4** Asked children to mark on the bottle with pens the outline for the 'doors' and 'windows' to be cut out as openings

- 5** Cut out the holes. This part of the activity was quite fiddly and time consuming and required substantial adult help

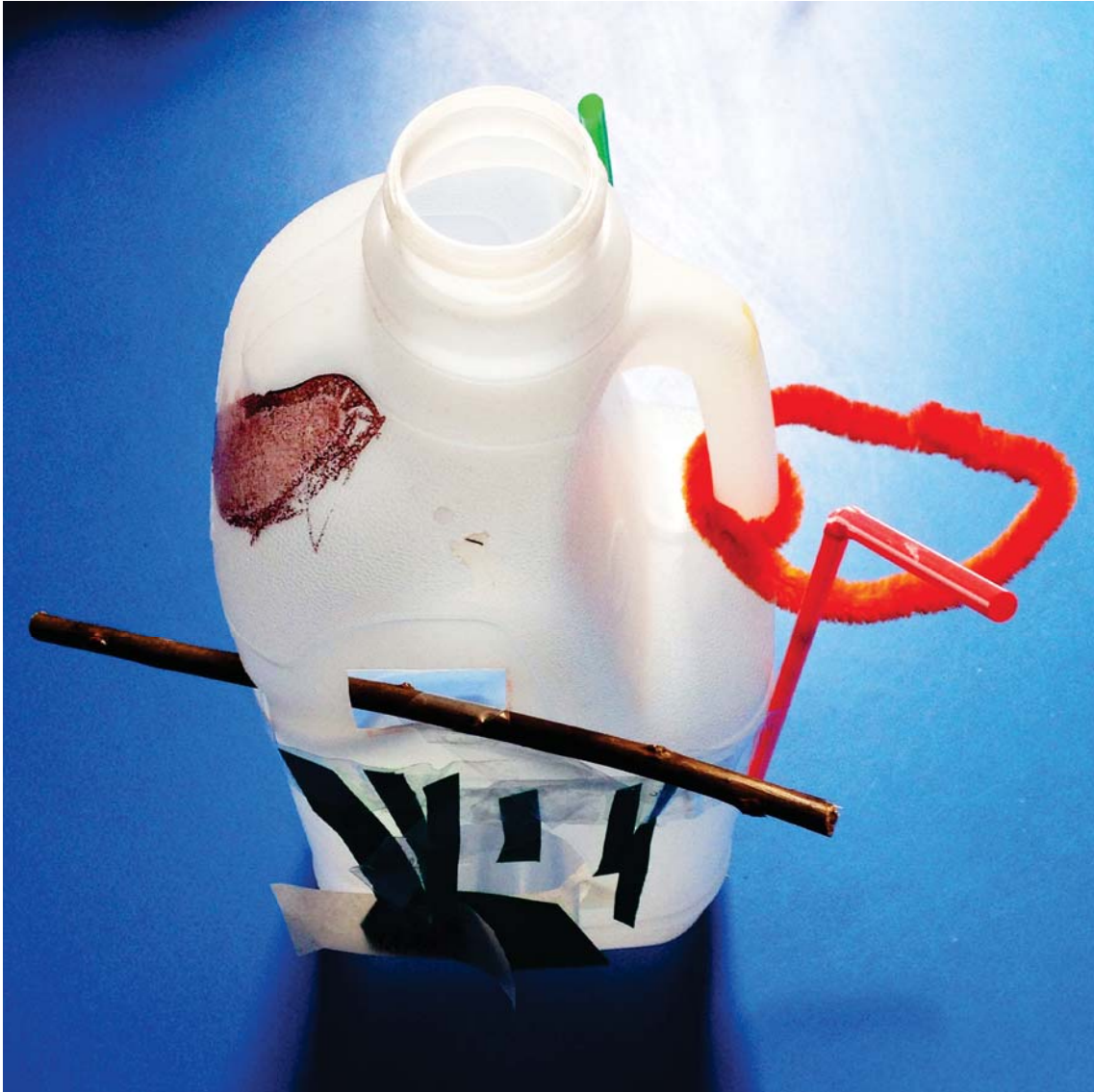
- 6** Asked what the group wanted to do next and an idea of making paper 'curtains' to cover the main opening was put forward

- 7** Children decorated bottles with sticks, straws, pipe cleaners, writing and drawing

The bug house activity was a much more free and unstructured activity. We gave each child a piece of re-used packaging of their choice and showed them how to fill the piece of material with straws/sticks for the bugs to 'nestle' in. Children also decorated their houses, adding folded paper or creating openings.

BIRD HOUSES

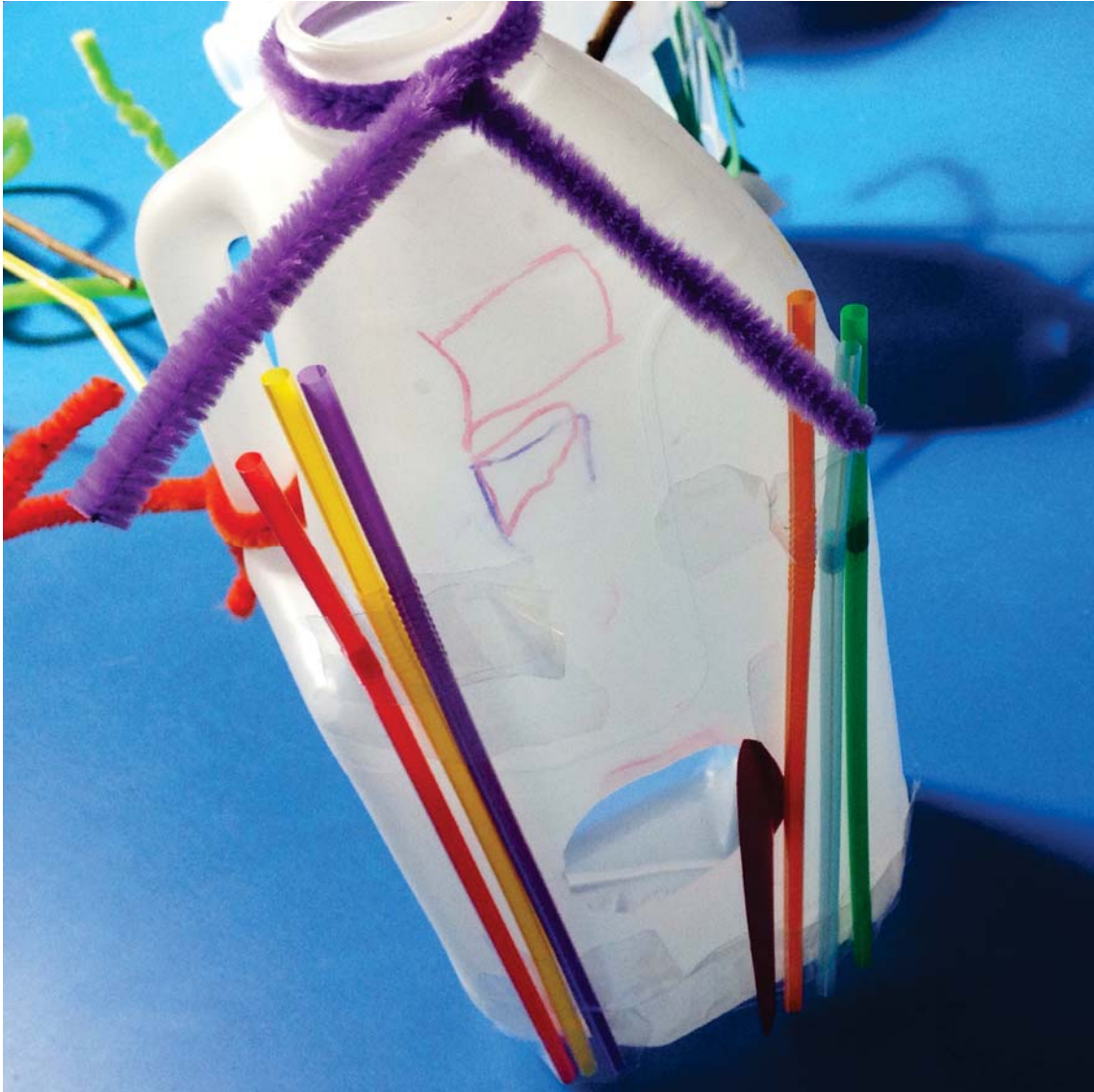
LOCAL CARDIFF PRIMARY SCHOOL



Bird House made by Reception learner
Photograph taken at a local Cardiff Primary School, June 2015



Bird House made by Reception learner
Copyright © 2015 by Education Structure
Photograph taken at a local Cardiff Primary School, June 2015



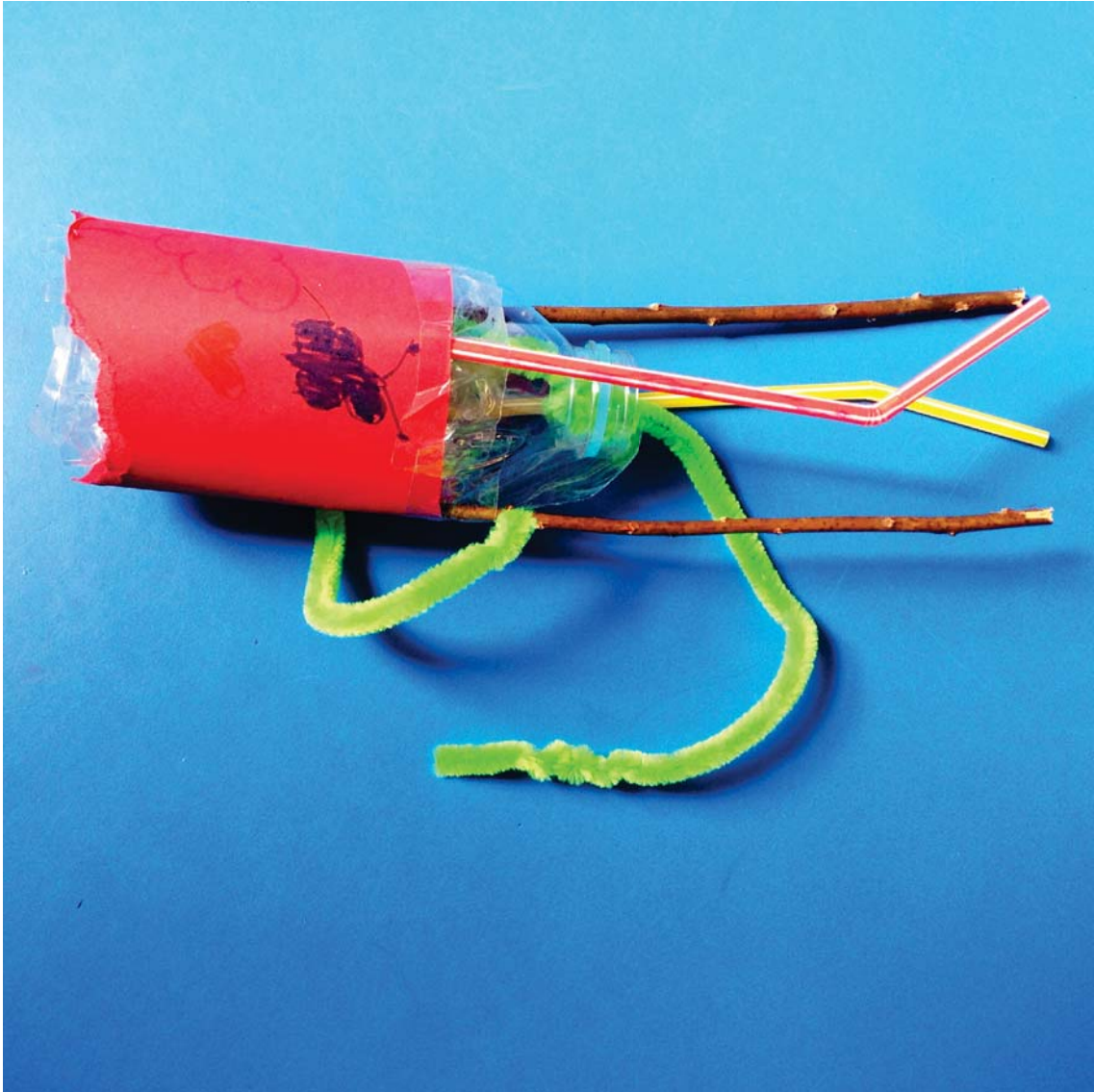
Bird House made by Reception learner
Photograph taken at a local Cardiff Primary School, June 2015

BUG HOUSES

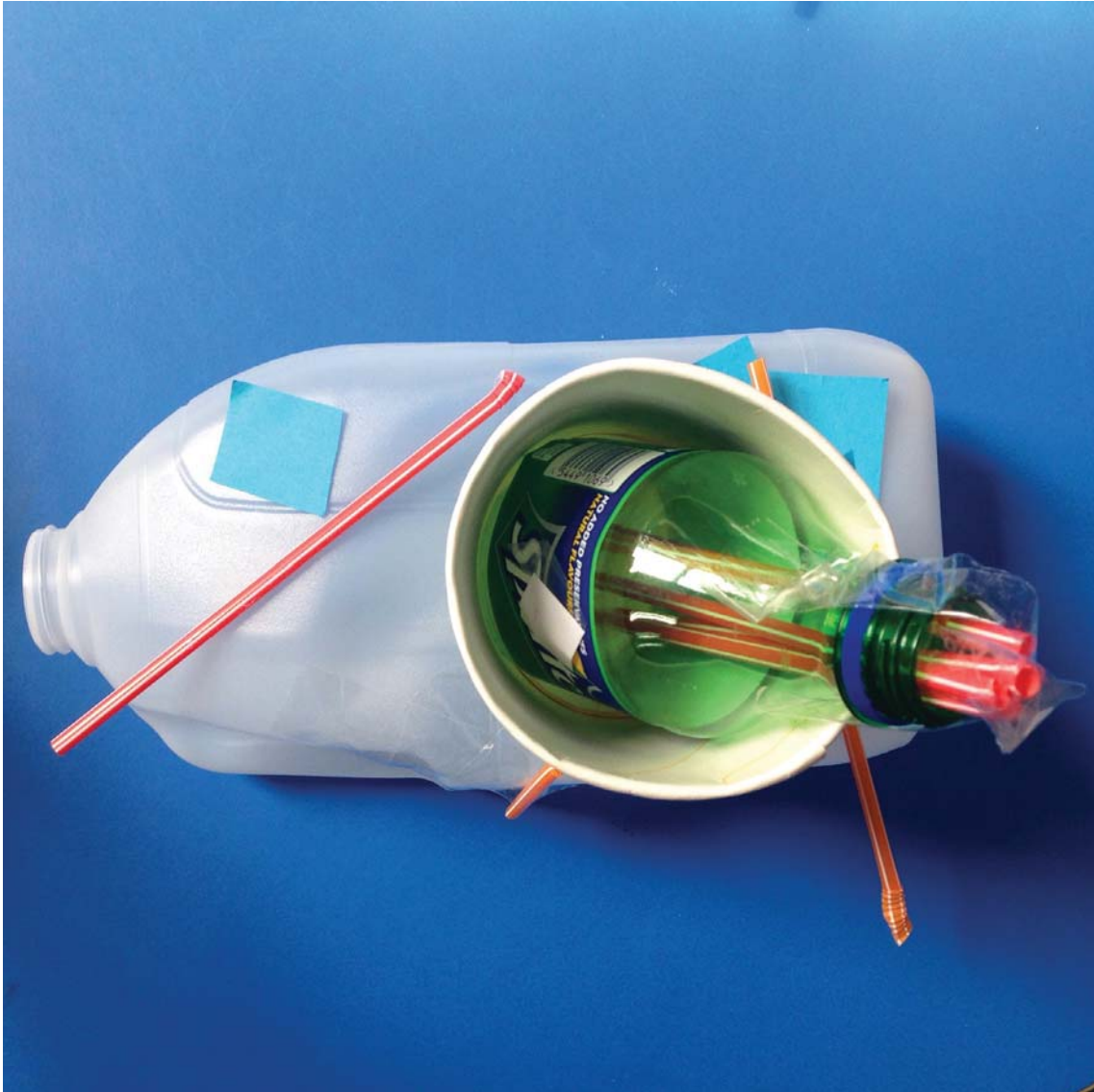
LOCAL CARDIFF PRIMARY SCHOOL



Bug House made by Reception learner
Photograph taken at a local Cardiff Primary School, June 2015



Bug House made by Reception learner
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Photograph taken at a local Cardiff Primary School, June 2015



Bug House made by Reception learner
Copyright © 2015 by Cardiff Primary School
Photograph taken at a local Cardiff Primary School, June 2015

BUG HUNT

WORKSHEET

RESOURCE FOR 'BUG HUNT'

Name _____

Bug Hunt

Bug Type	Name	Tally Chart	Number
	Ladybird		
	Ant		
	Woodlouse		
	Butterfly		
	Worm		
	Beetle		
	Snail		
	Bumble Bee		
	Spider		

BUG FACTFILE

WORKSHEETS

RESOURCE FOR 'LEARNING ABOUT BUGS'

Name _____

Bug Factfile

Worm



How big am I? _____

What do I look like? _____

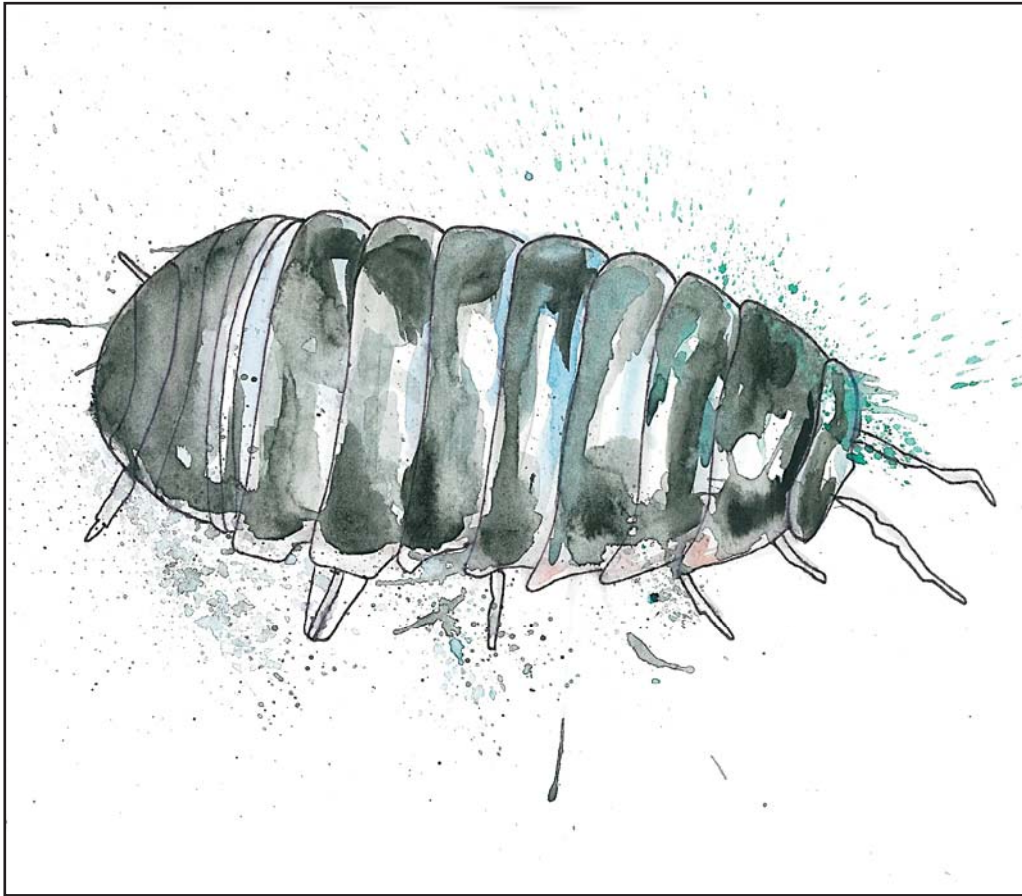
Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Woodlouse



How big am I? _____

What do I look like? _____

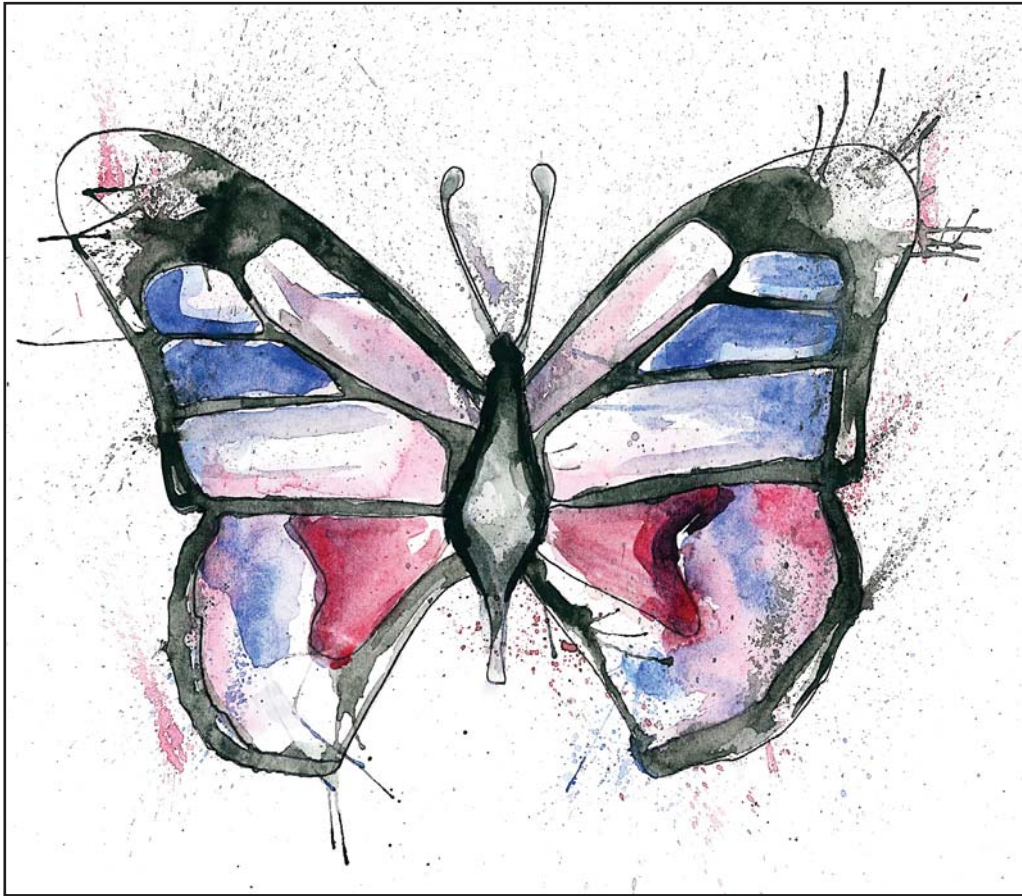
Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Butterfly



How big am I? _____

What do I look like? _____

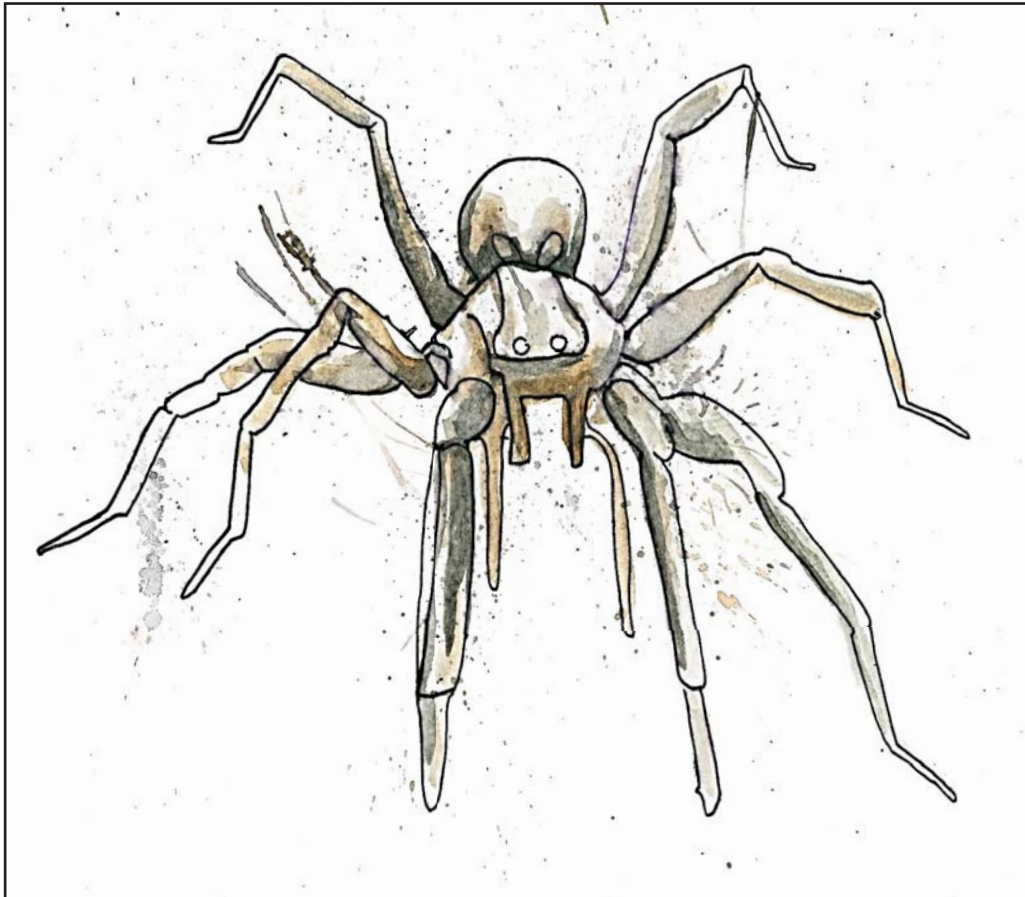
Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Spider



How big am I? _____

What do I look like? _____

Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Snail



How big am I? _____

What do I look like? _____

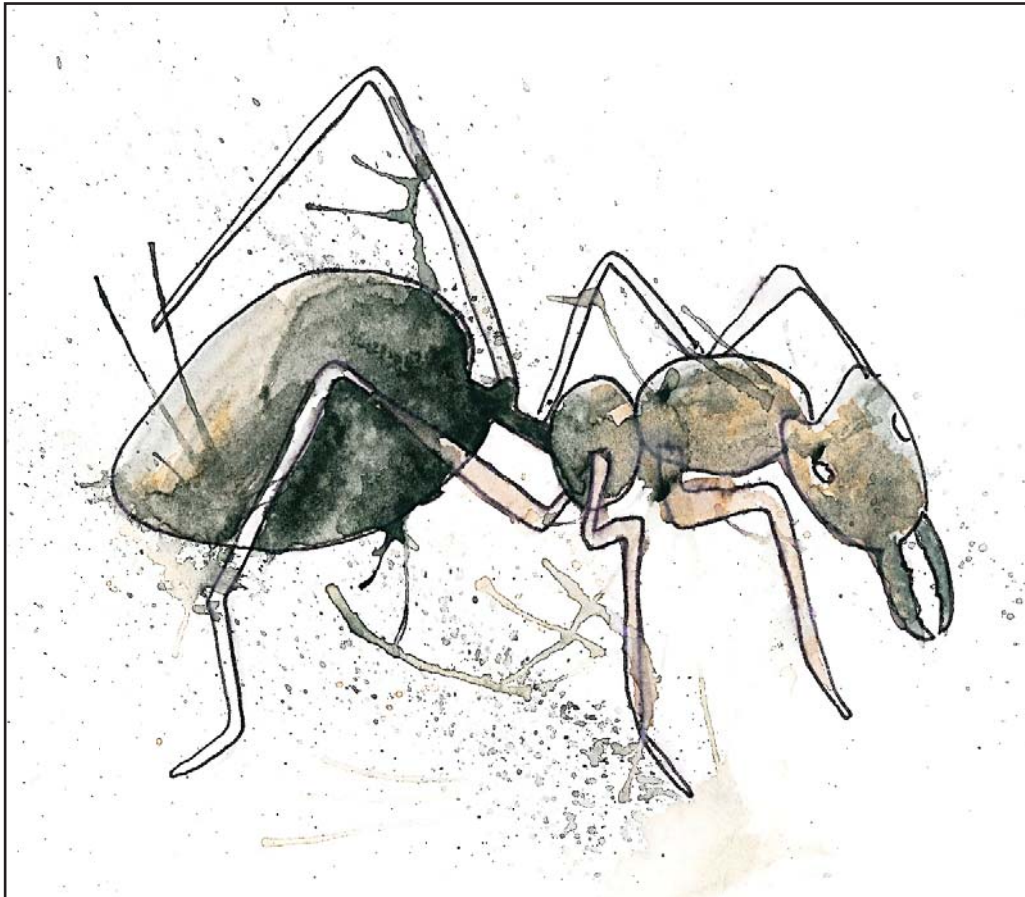
Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Ant



How big am I? _____

What do I look like? _____

Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Bumble Bee



How big am I? _____

What do I look like? _____

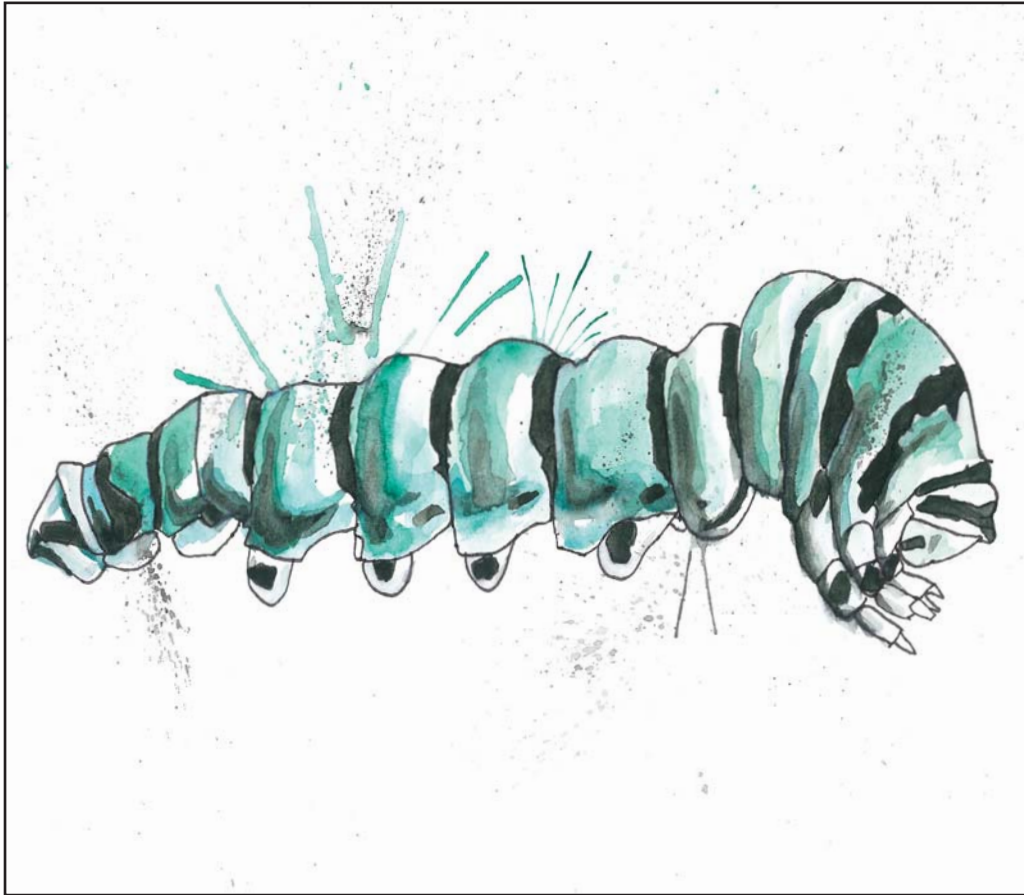
Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Caterpillar



How big am I? _____

What do I look like? _____

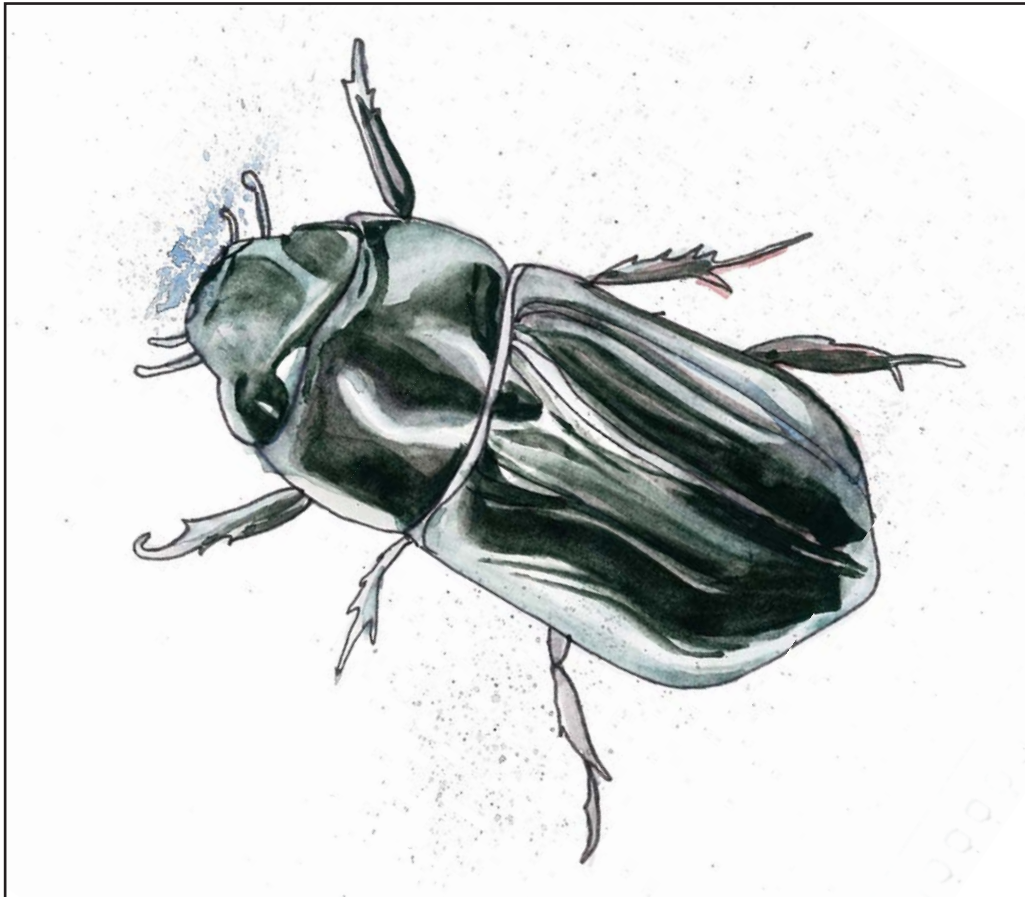
Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Beetle



How big am I? _____

What do I look like? _____

Where do I live? _____

What do I eat? _____

Name _____

Bug Factfile

Ladybird



How big am I? _____

What do I look like? _____

Where do I live? _____

What do I eat? _____

BUG

WORKSHEETS

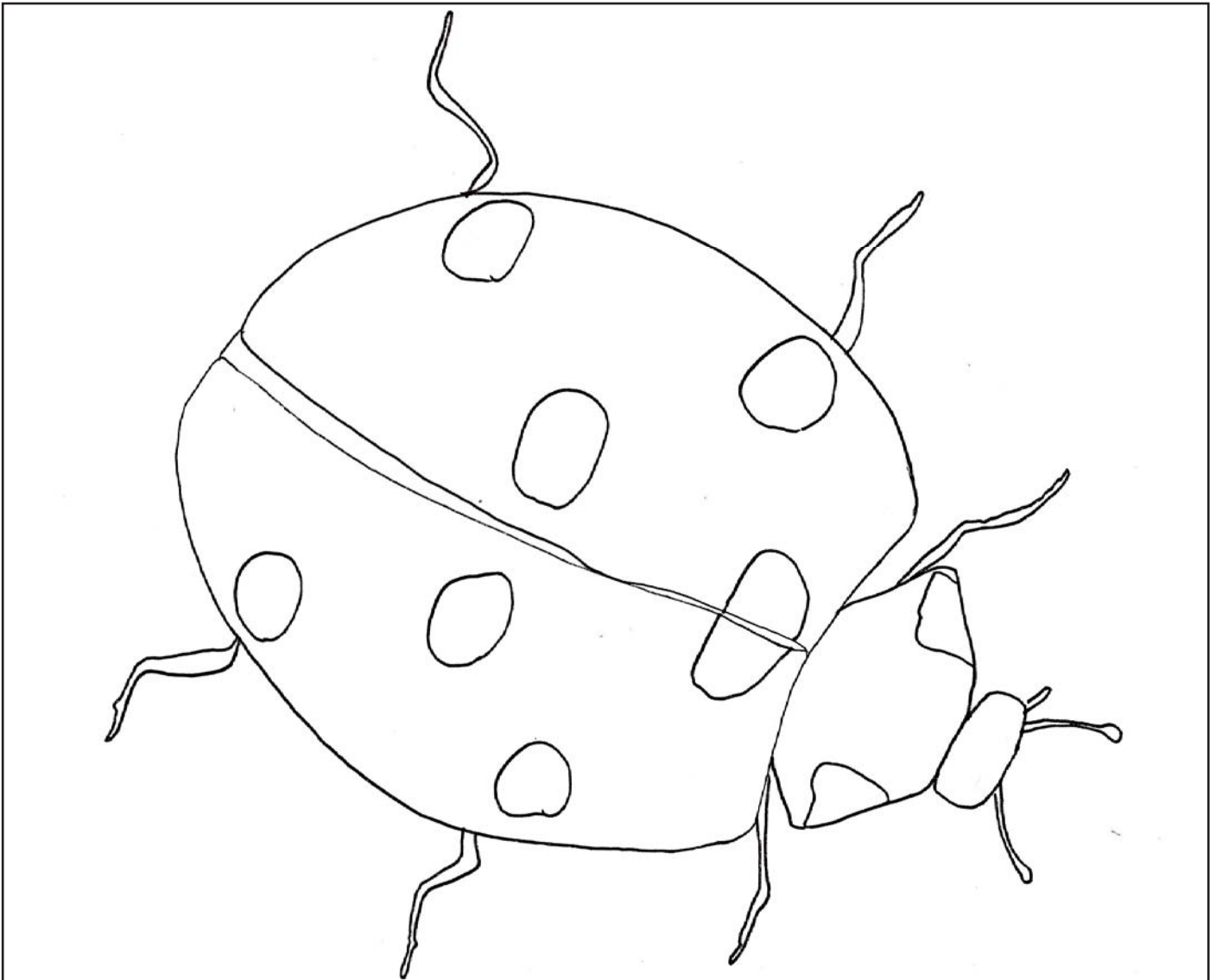
RESOURCE FOR 'REVIEW'

For Younger Learners (Year Reception)

Name _____



Colour in the drawing

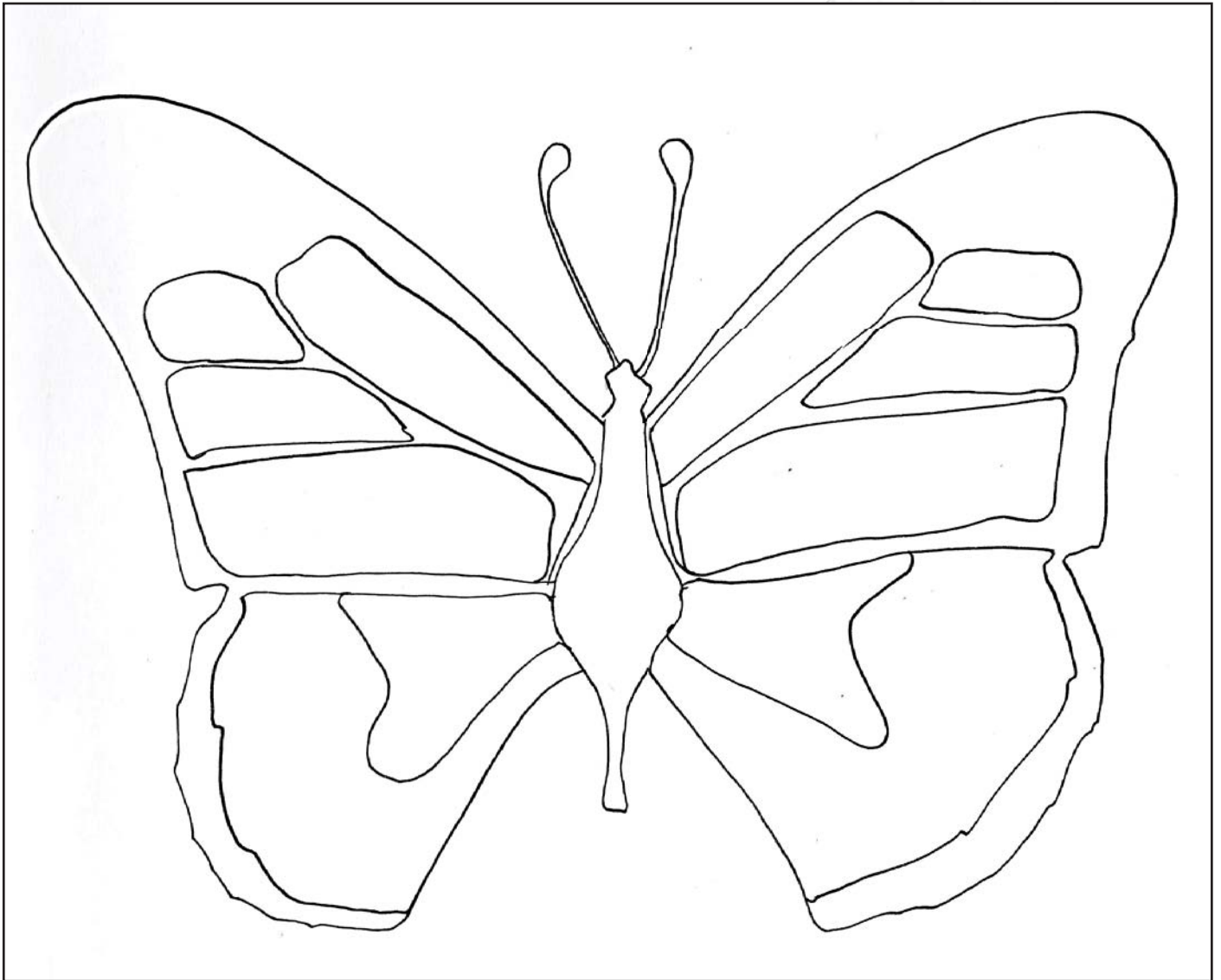


What type of bug is this? _____

What did you use to make your bug house? _____

Name _____

Colour in the drawing



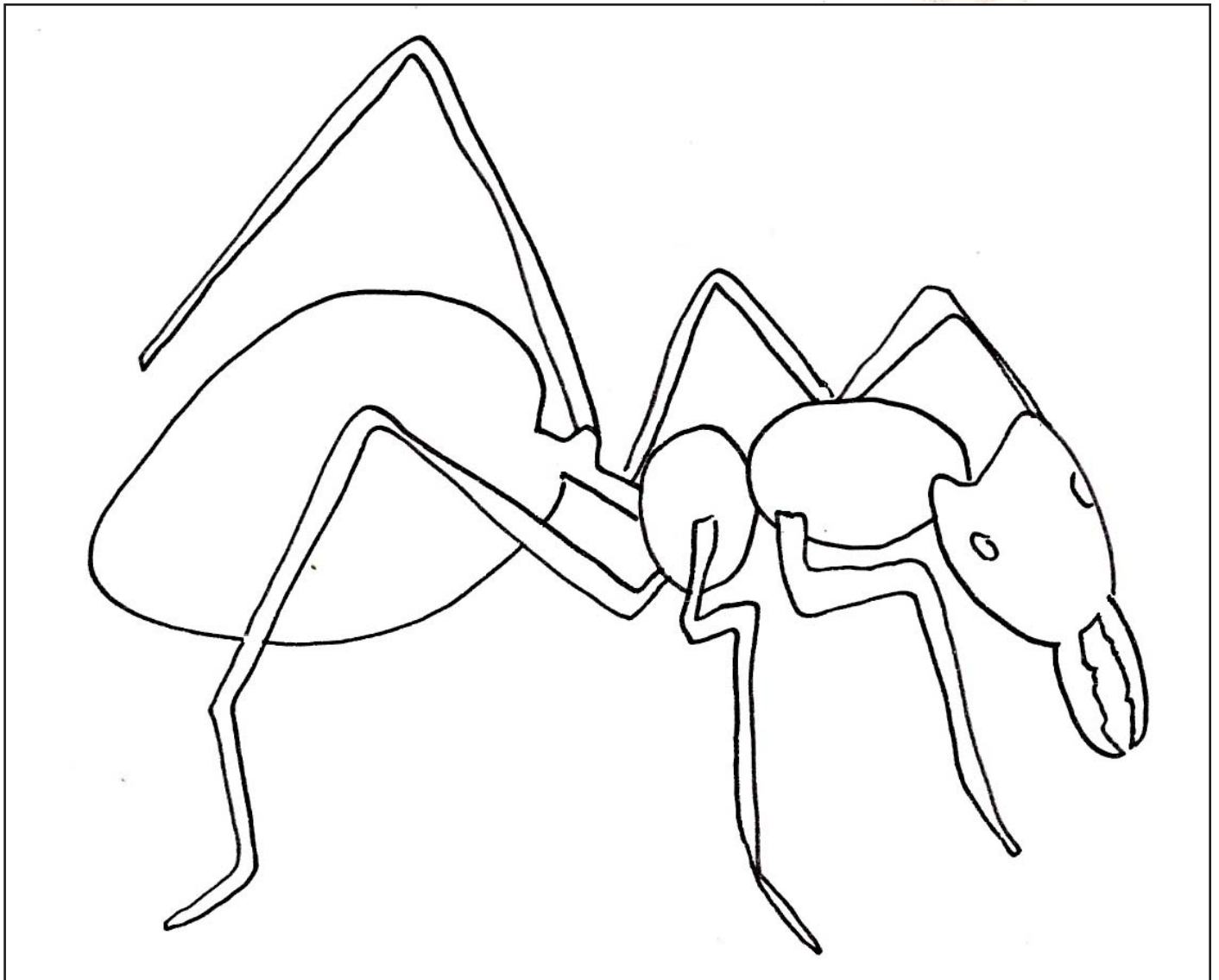
What type of bug is this? _____

What did you use to make your bug house? _____

Name _____



Colour in the drawing



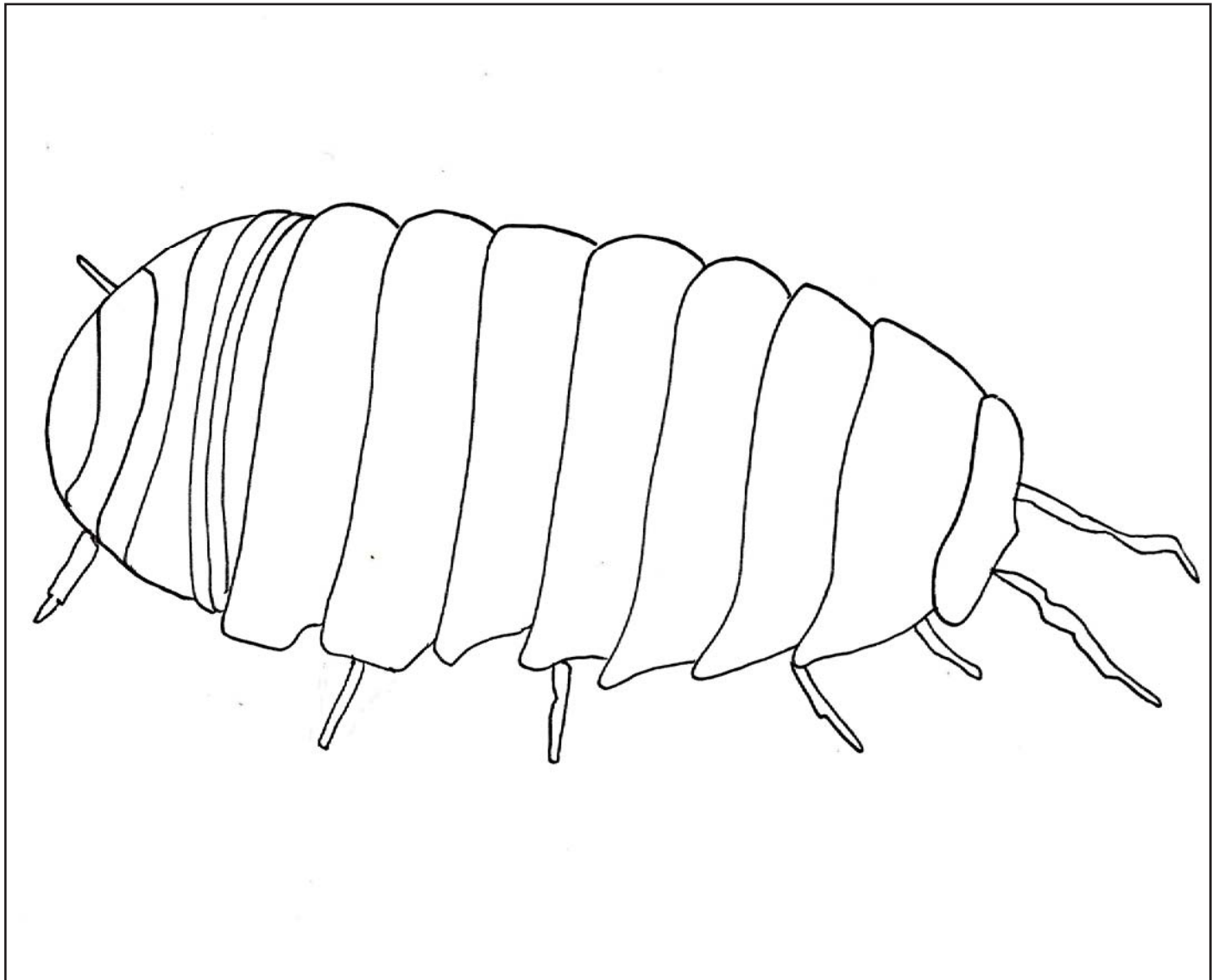
What type of bug is this? _____

What did you use to make your bug house? _____

Name _____



Colour in the drawing



What type of bug is this? _____

What did you use to make your bug house? _____

BUG

WORKSHEETS

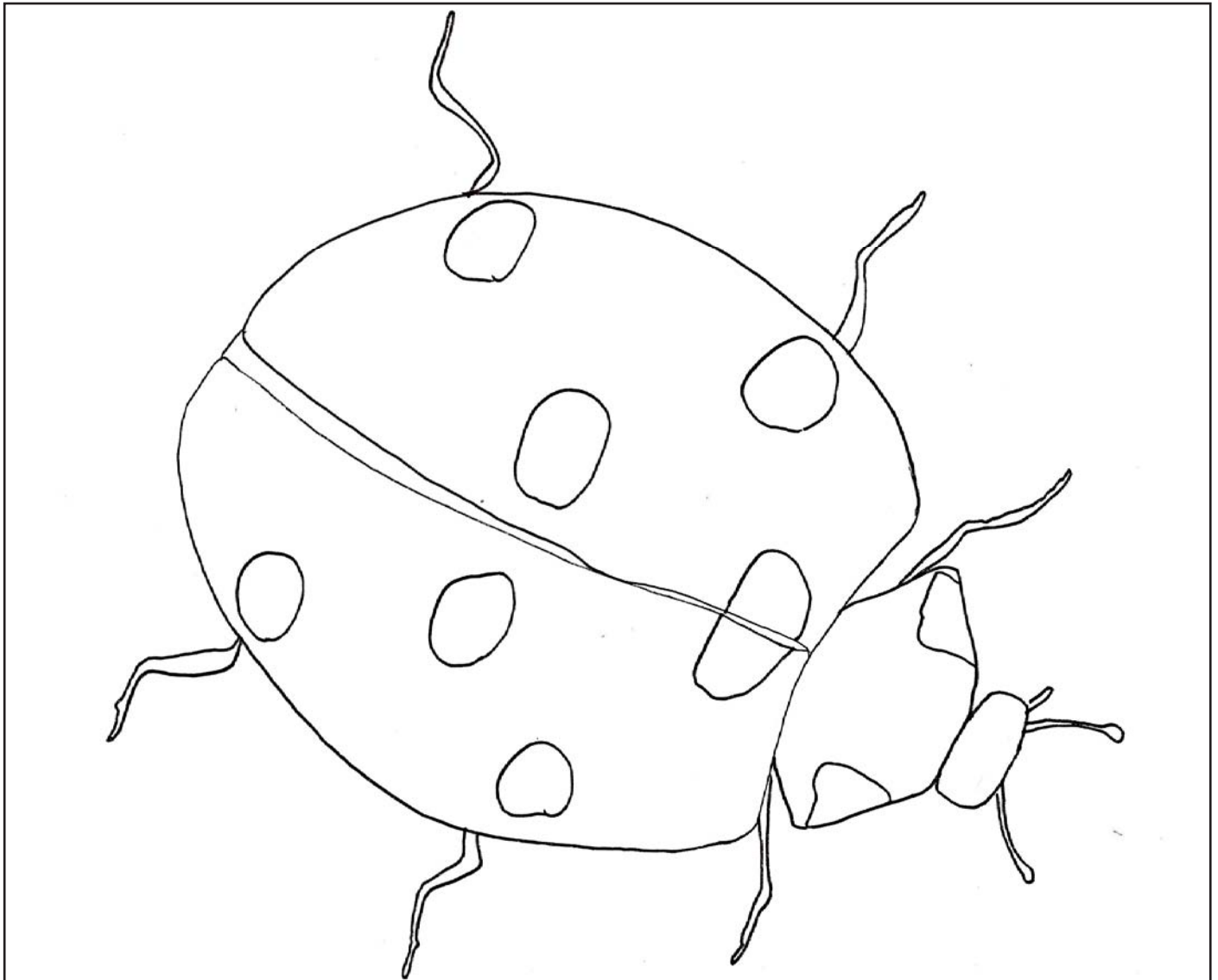
RESOURCE FOR 'REVIEW'

For Older KS1 Learners (Year 1 - Year 2)



Name _____

Colour in the drawing



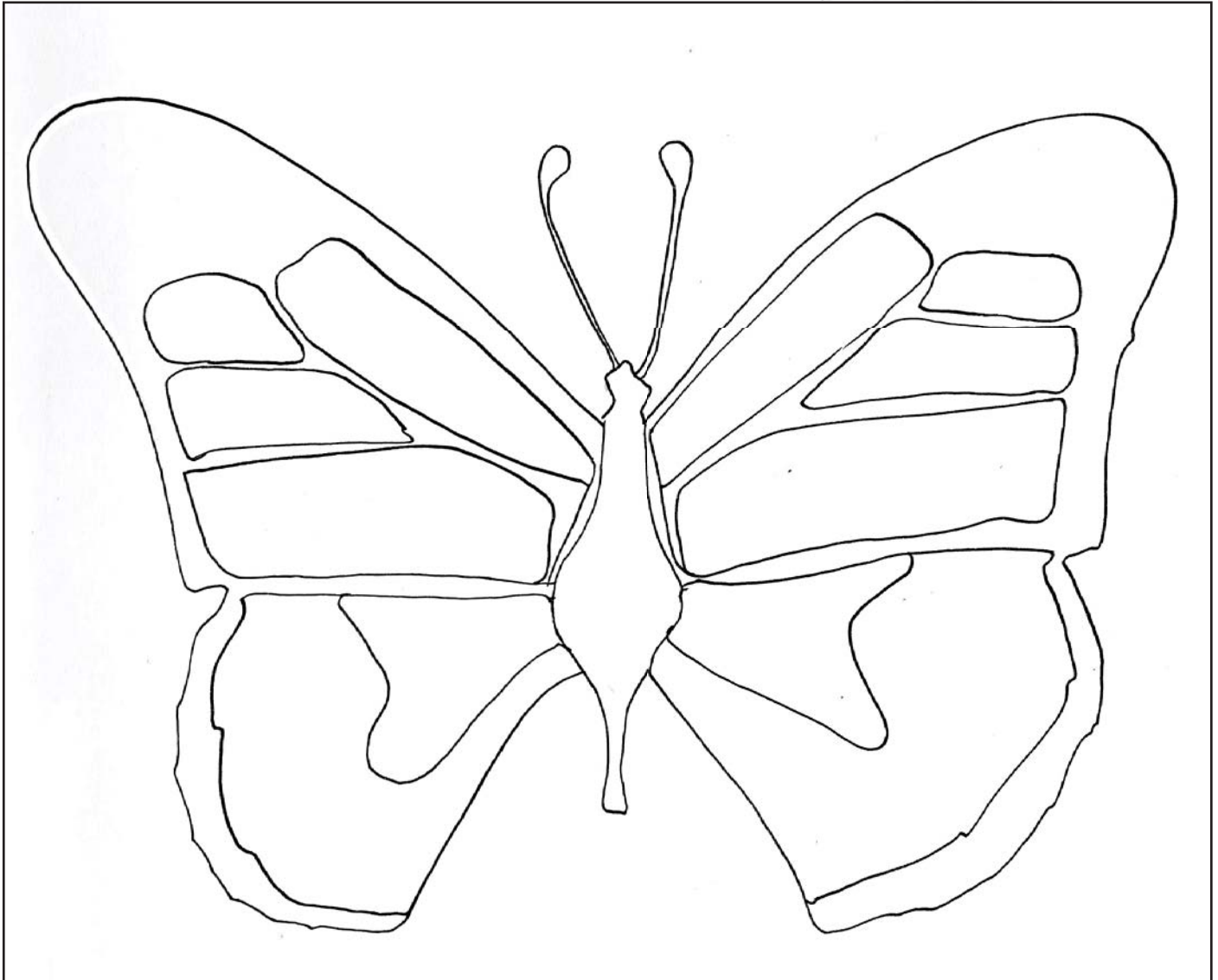
What type of bug is this? _____

How did you make your bug house?

Name _____



Colour in the drawing

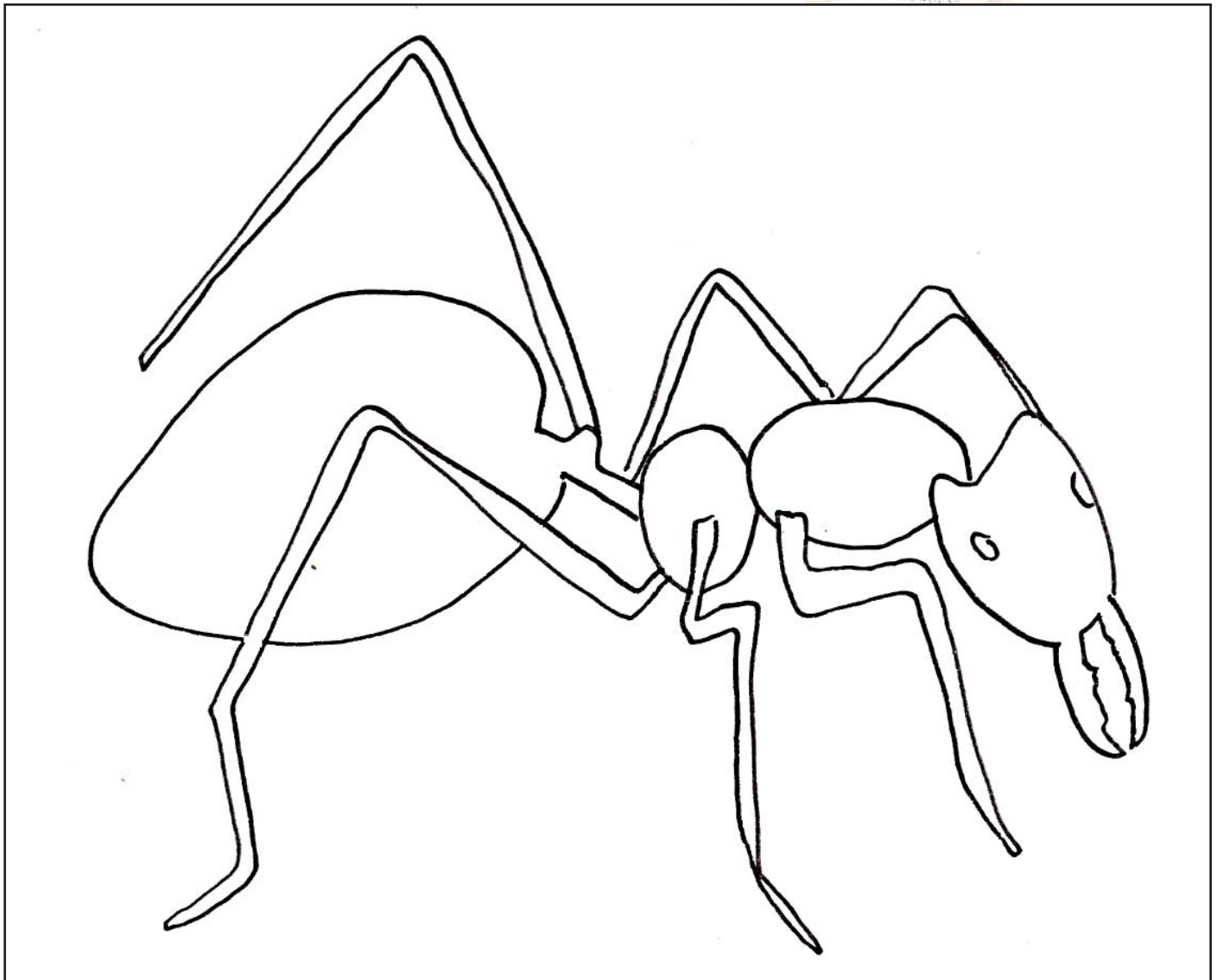


What type of bug is this? _____

How did you make your bug house?

Name _____

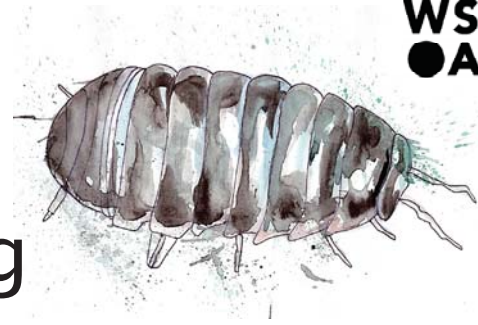
Colour in the drawing



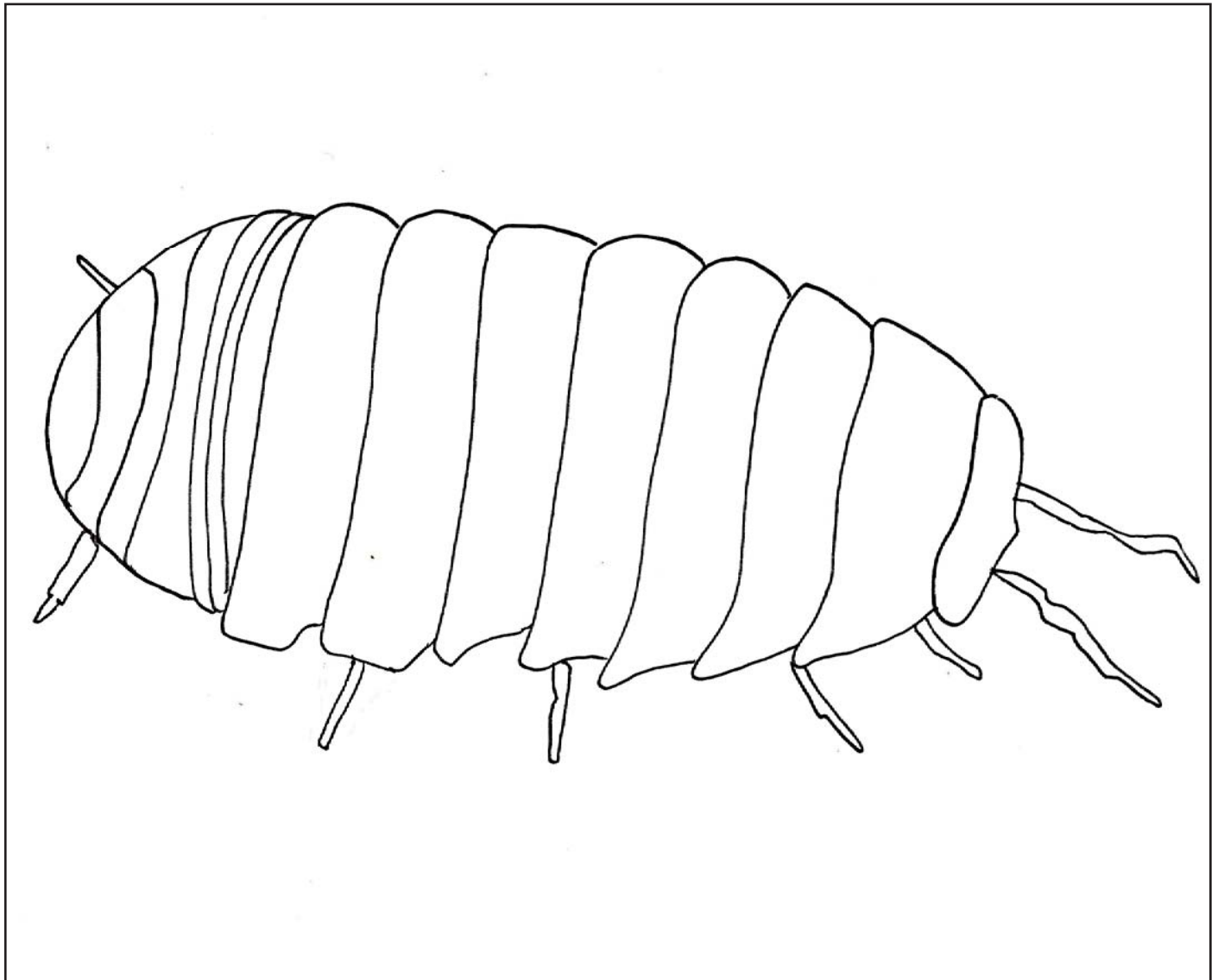
What type of bug is this? _____

How did you make your bug house?

Name _____



Colour in the drawing



What type of bug is this? _____

How did you make your bug house?

Name _____



Draw your bug house

Describe your bug house

What does an architect do?



Name _____

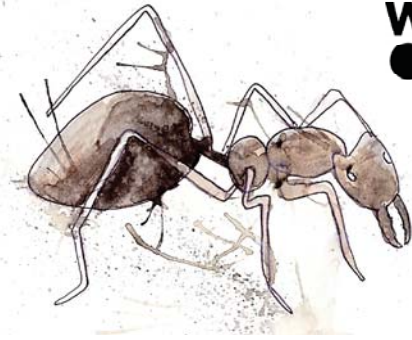
Draw your bug house

Describe your bug house

What does an architect do?

Name _____

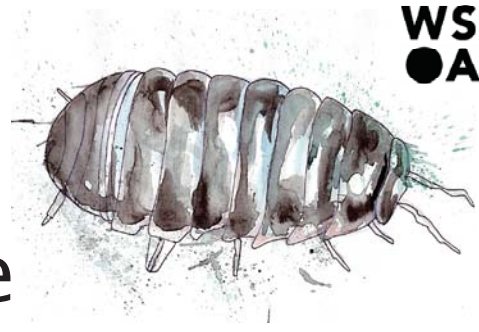
Draw your bug house



Describe your bug house

What does an architect do?

Name _____



Draw your bug house

Describe your bug house

What does an architect do?



**CREATED BY BETHANY HASTINGS AT THE WELSH
SCHOOL OF ARCHITECTURE**

ILLUSTRATIONS BY BETHANY HASTINGS AND CAITLIN MULLARD

