



UBC  
Botanical  
Garden

Environmental Education  
Resource Kit:

# Plants and Pollinators

2024

Made in partnership with:



**BIMBY**

BUTTERFLIES IN MY BACKYARD  
Community Science Project

With work by:

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Winnie Hwo, Tara Moreau

UBC Botanical Garden and Butterflies in My Backyard (BIMBY) collaborated to create resources for educators who want to implement environmental education into their teaching. These resources focus on themes such as pollination and plant identification explored through engaging, inquiry-based activities. They are designed for younger students (4-12 years old) but can be adapted for any learner.

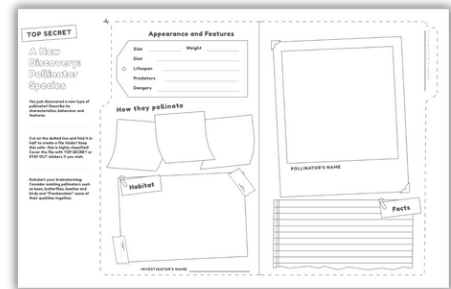
*We hope you enjoy!*

## Activities

### A New Discovery: Pollinator Species

1 page: Activity Sheet  
(Tabloid size)

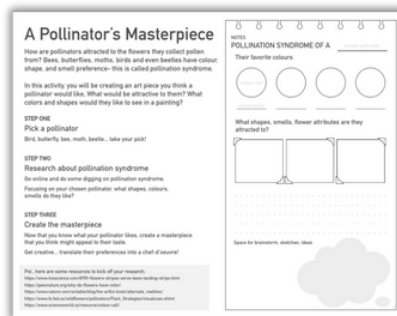
pg. 7



### A Pollinator Masterpiece

1 page: Activity Sheet

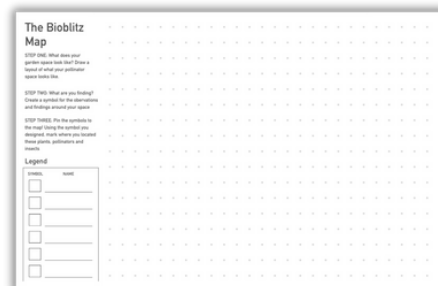
pg. 8



### Bioblitz Map

1 page: Activity Sheet  
(Tabloid size)

pg. 9



## Botanical Trading Cards

1 page: Activity Sheet  
(3 cards per page)

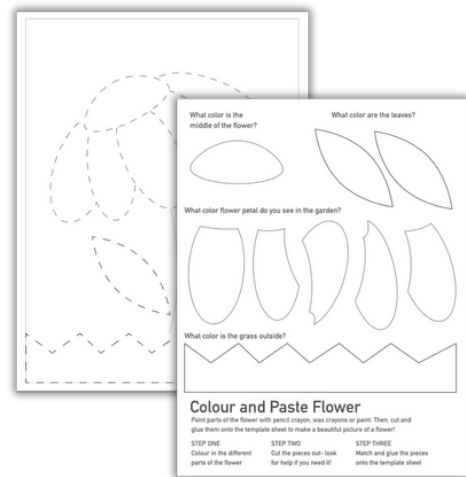
pg. 10



## Colour and Paste Flower

2 pages: Instructions and Template

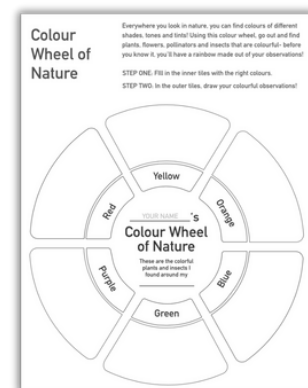
pg. 11-12



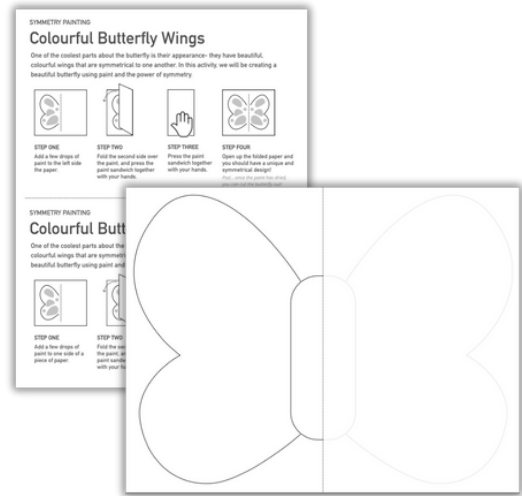
## Colour Wheel of Nature

1 page: Activity Sheet

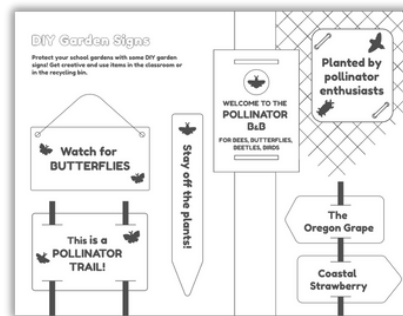
pg. 13



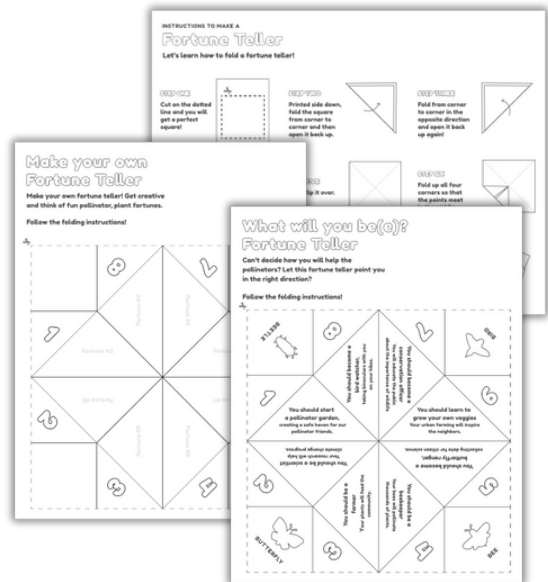
**Colourful Butterfly Wings**  
2 pages: Instructions and Template  
(2 sheets per Instructions page)  
*pg. 14-15*



**DIY Garden Signs**  
1 page: Examples  
*pg. 16*



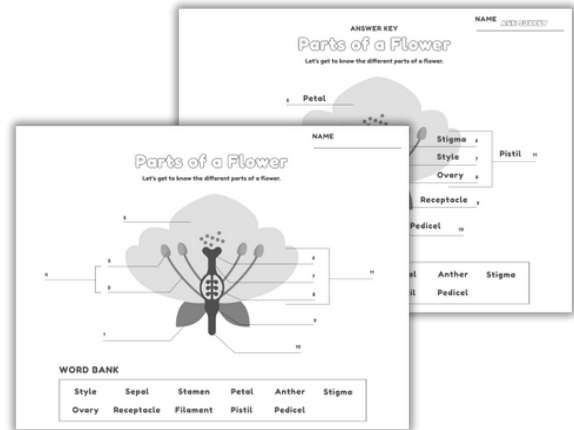
**Fortune Teller**  
3 pages: Instructions, Template,  
and Example  
*pg. 17-19*



## Parts of a Flower

2 pages: Activity and Answer Key

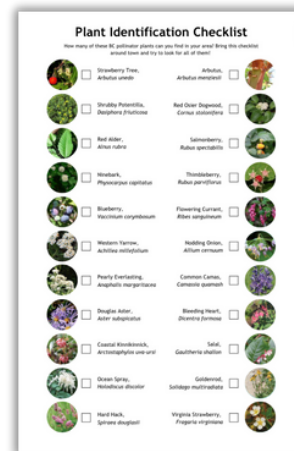
pg. 20-21



## Plant Identification Checklist

1 page: Activity Sheet  
(Print coloured, tabloid size)

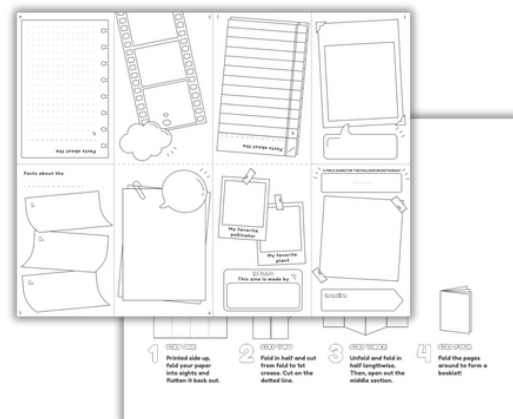
pg. 22



## Pollinator Field Guide

2 pages: Instructions and Template

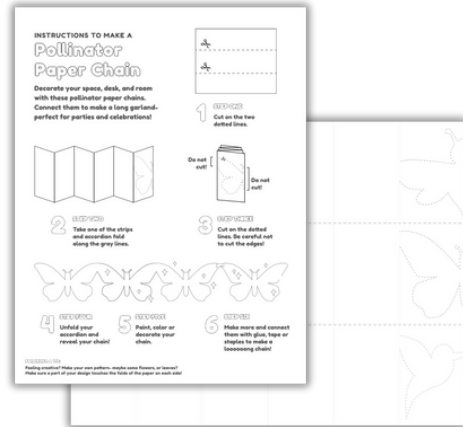
pg. 23-24



## Pollinator Paper Chain

2 pages: Instructions and Template

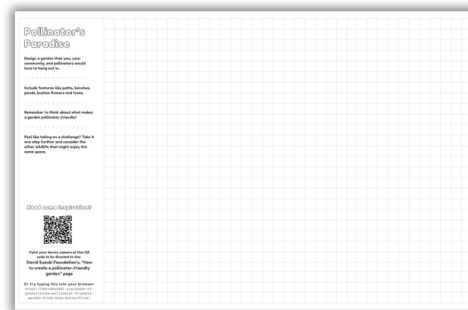
pg. 25-26



## Pollinator's Paradise

1 page: Activity Sheet  
(Tabloid size)

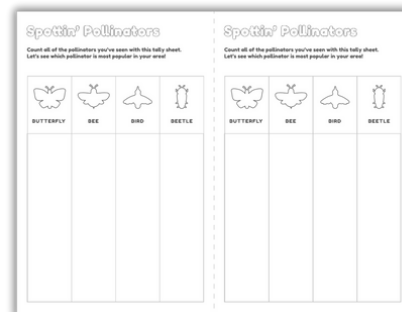
pg. 27



## Spottin' Pollinators

1 page: Activity Sheet  
(2 sheets per page)

pg. 28



## Writing and Project Prompts

1 page: Activity Sheet

pg. 29



**TOP SECRET**

# A New Discovery: Pollinator Species

You just discovered a new type of pollinator! Describe its characteristics, behaviour and features.

Cut on the dotted line and fold it in half to create a file folder! Keep this safe- this is highly classified! Cover the file with TOP SECRET or STAY OUT stickers if you wish.

Kickstart your brainstorming: Consider existing pollinators such as bees, butterflies, beetles and birds and "Frankenstein" some of their qualities together.

**Appearance and Features**

Size \_\_\_\_\_ Weight \_\_\_\_\_

Diet \_\_\_\_\_

○ Lifespan \_\_\_\_\_

Predators \_\_\_\_\_

Dangers \_\_\_\_\_

**How they pollinate**

**Habitat**

**POLLINATOR'S NAME**

**Facts**

**INVESTIGATOR'S NAME** \_\_\_\_\_

**POLLINATOR'S NAME**

# A Pollinator's Masterpiece

How are pollinators attracted to the flowers they collect pollen from? Bees, butterflies, moths, birds and even beetles have colour, shape, and smell preference- this is called pollination syndrome.

In this activity, you will be creating an art piece you think a pollinator would like. What would be attractive to them? What colors and shapes would they like to see in a painting?

## STEP ONE

### Pick a pollinator

Bird, butterfly, bee, moth, beetle... take your pick!

## STEP TWO

### Research about pollination syndrome

Go online and do some digging on pollination syndrome.

Focusing on your chosen pollinator, what shapes, colours, smells do they like?

## STEP THREE

### Create the masterpiece

Now that you know what your pollinator likes, create a masterpiece that you think might appeal to their taste.

Get creative... translate their preferences into a chef-d'oeuvre!

Pst...here are some resources to kick off your research:

<https://www.livescience.com/8759-flowers-stripes-serve-bees-landing-strips.html>

<https://peecnature.org/why-do-flowers-have-color/>

[https://www.nature.com/scitable/blog/the-artful-brain/alternate\\_realities/](https://www.nature.com/scitable/blog/the-artful-brain/alternate_realities/)

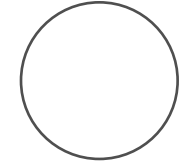
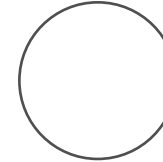
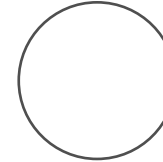
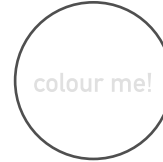
[https://www.fs.fed.us/wildflowers/pollinators/Plant\\_Strategies/visualcues.shtml](https://www.fs.fed.us/wildflowers/pollinators/Plant_Strategies/visualcues.shtml)

<https://www.scienceworld.ca/resource/colour-call/>

NOTES

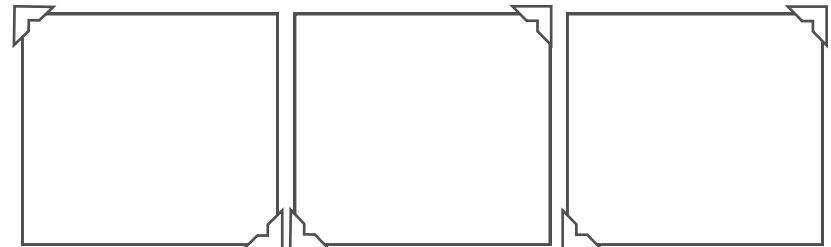
POLLINATION SYNDROME OF A chosen pollinator

Their favorite colours



colour name

What shapes, smells, flower attributes are they attracted to?



.....

.....

.....

.....

.....

Space for brainstorm, sketches, ideas





# The Bioblitz Map

STEP ONE: What does your garden space look like? Draw a layout of what your pollinator space looks like.

STEP TWO: What are you finding? Create a symbol for the observations and findings around your space

STEP THREE: Pin the symbols to the map! Using the symbol you designed, mark where you located these plants, pollinators and insects

## Legend

SYMBOL	NAME
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____



# Botanical Trading Cards

Which plants have you seen in your area? Take note of their size, location and pollinators. Research their botanical names, and draw what they look like!

Collect your own deck of trading cards, or share them with you friends!

Common Plant Name

Botanical Name

Width and Height

Conditions

SUN • SHADE • PART-SHADE

DRY • WET • WELL-DRAINED

Pollinators it attracts

Common Plant Name

Botanical Name

Width and Height

Conditions

SUN • SHADE • PART-SHADE

DRY • WET • WELL-DRAINED

Pollinators it attracts

Common Plant Name

Botanical Name

Width and Height

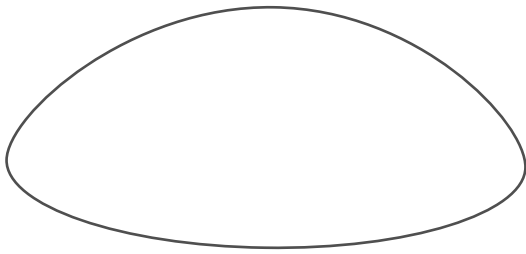
Conditions

SUN • SHADE • PART-SHADE

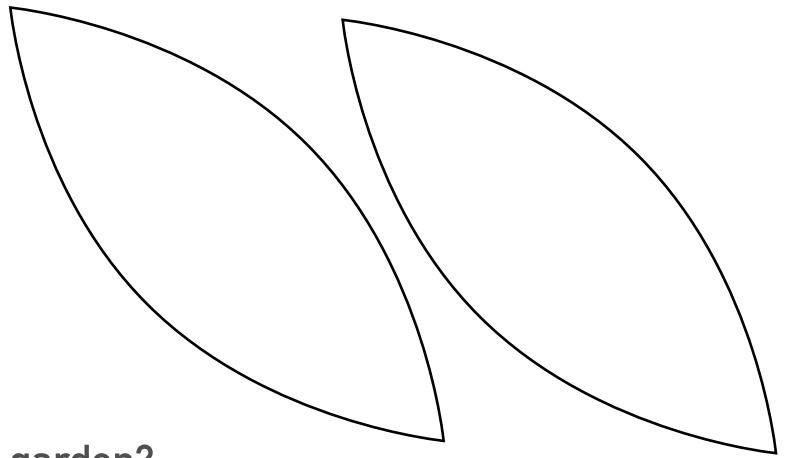
DRY • WET • WELL-DRAINED

Pollinators it attracts

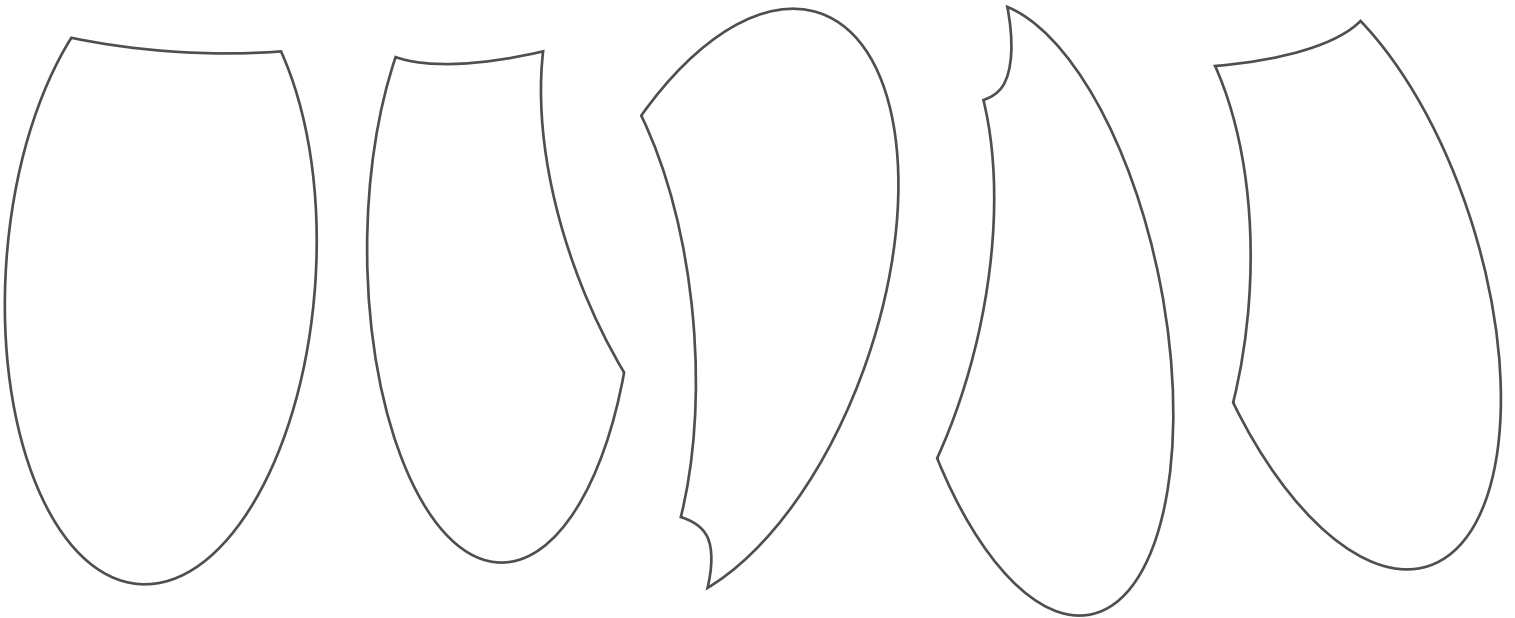
What color is the middle of the flower?



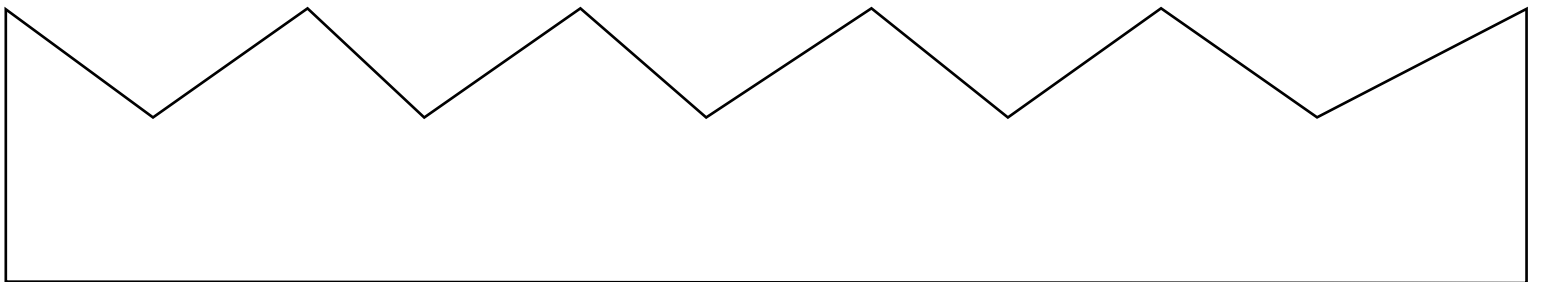
What color are the leaves?



What color flower petal do you see in the garden?



What color is the grass outside?



# Colour and Paste Flower

Paint parts of the flower with pencil crayon, wax crayons or paint. Then, cut and glue them onto the template sheet to make a beautiful picture of a flower!

## STEP ONE

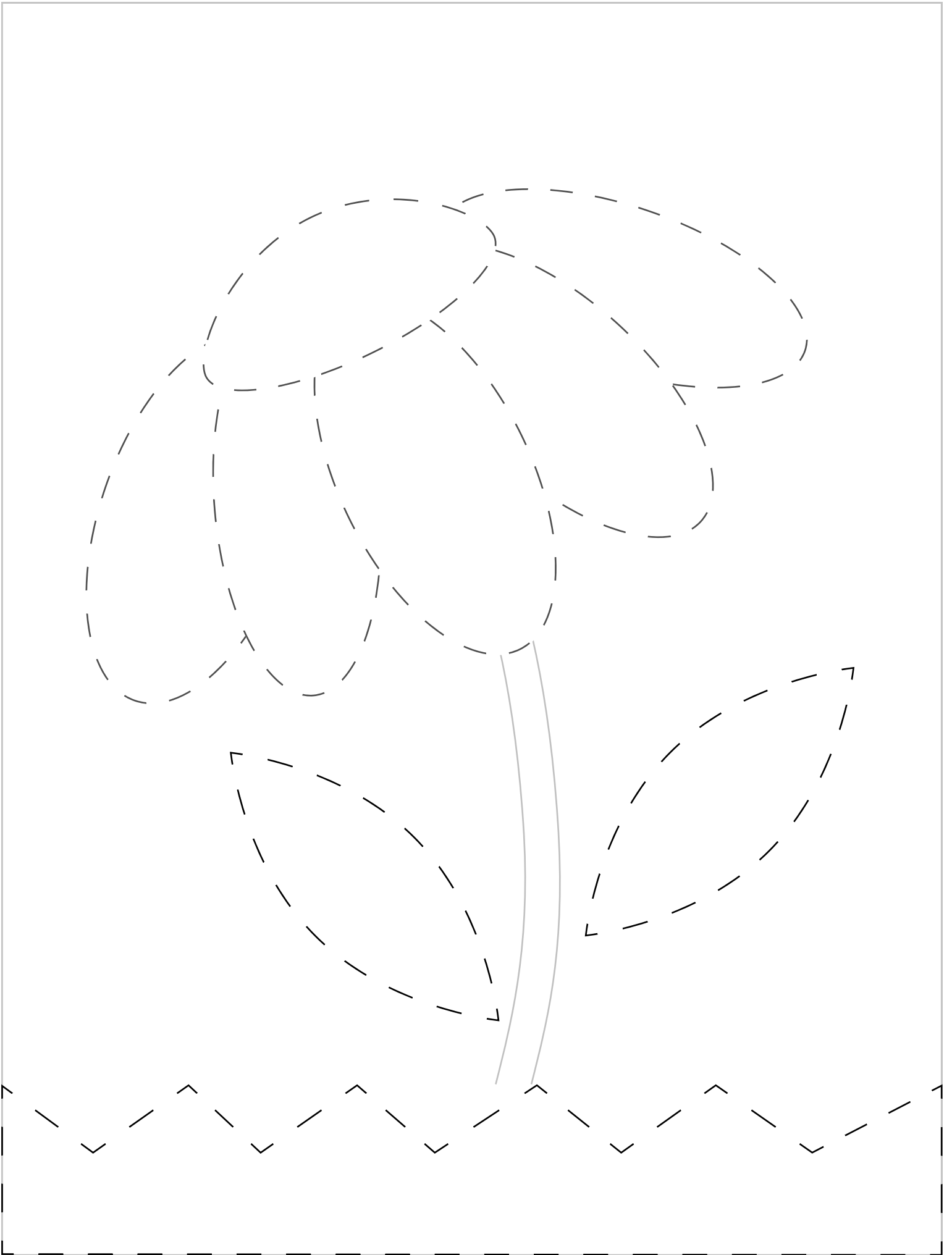
Colour in the different parts of the flower

## STEP TWO

Cut the pieces out- look for help if you need it!

## STEP THREE

Match and glue the pieces onto the template sheet

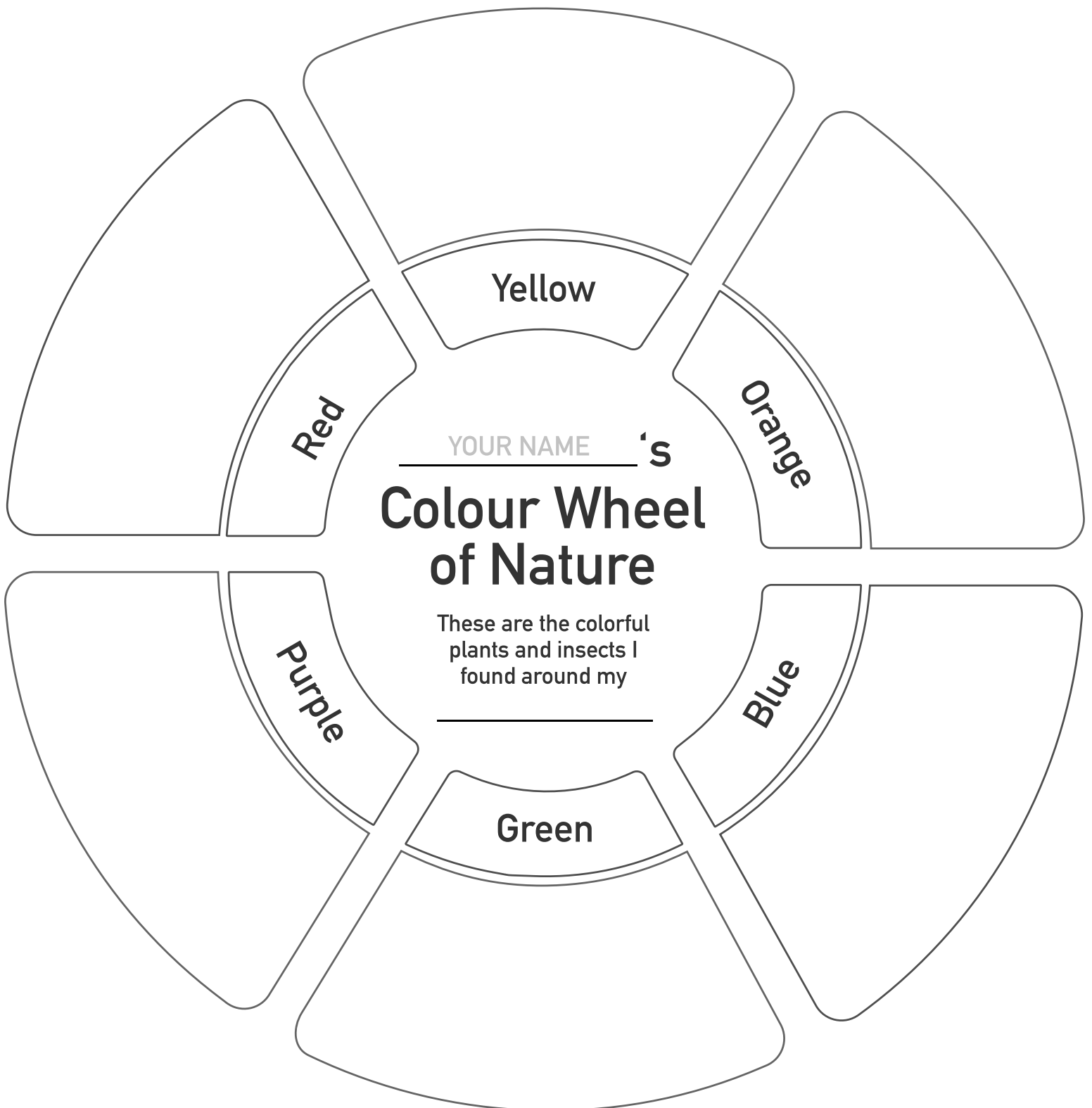


# Colour Wheel of Nature

Everywhere you look in nature, you can find colours of different shades, tones and tints! Using this colour wheel, go out and find plants, flowers, pollinators and insects that are colourful- before you know it, you'll have a rainbow made out of your observations!

STEP ONE: Fill in the inner tiles with the right colours.

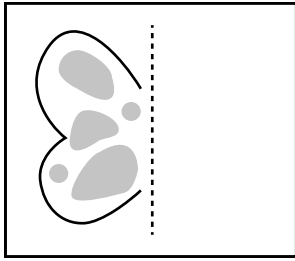
STEP TWO: In the outer tiles, draw your colourful observations!



## SYMMETRY PAINTING

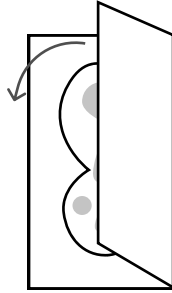
# Colourful Butterfly Wings

One of the coolest parts about the butterfly is their appearance- they have beautiful, colourful wings that are symmetrical to one another. In this activity, we will be creating a beautiful butterfly using paint and the power of symmetry.



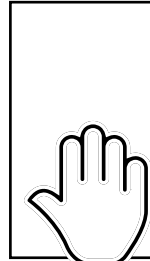
### STEP ONE

Add a few drops of paint to the left side the paper.



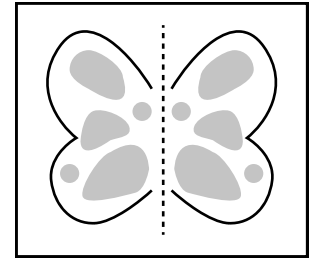
### STEP TWO

Fold the second side over the paint, and press the paint sandwich together with your hands.



### STEP THREE

Press the paint sandwich together with your hands.



### STEP FOUR

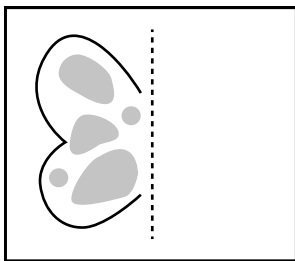
Open up the folded paper and you should have a unique and symmetrical design!

*Psst... once the paint has dried, you can cut the butterfly out!*

## SYMMETRY PAINTING

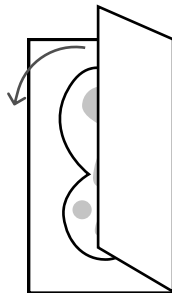
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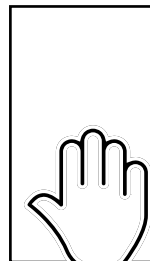
### STEP ONE

Add a few drops of paint to one side of a piece of paper.



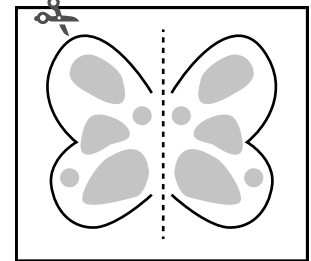
### STEP TWO

Fold the second side over the paint, and press the paint sandwich together with your hands.



### STEP THREE

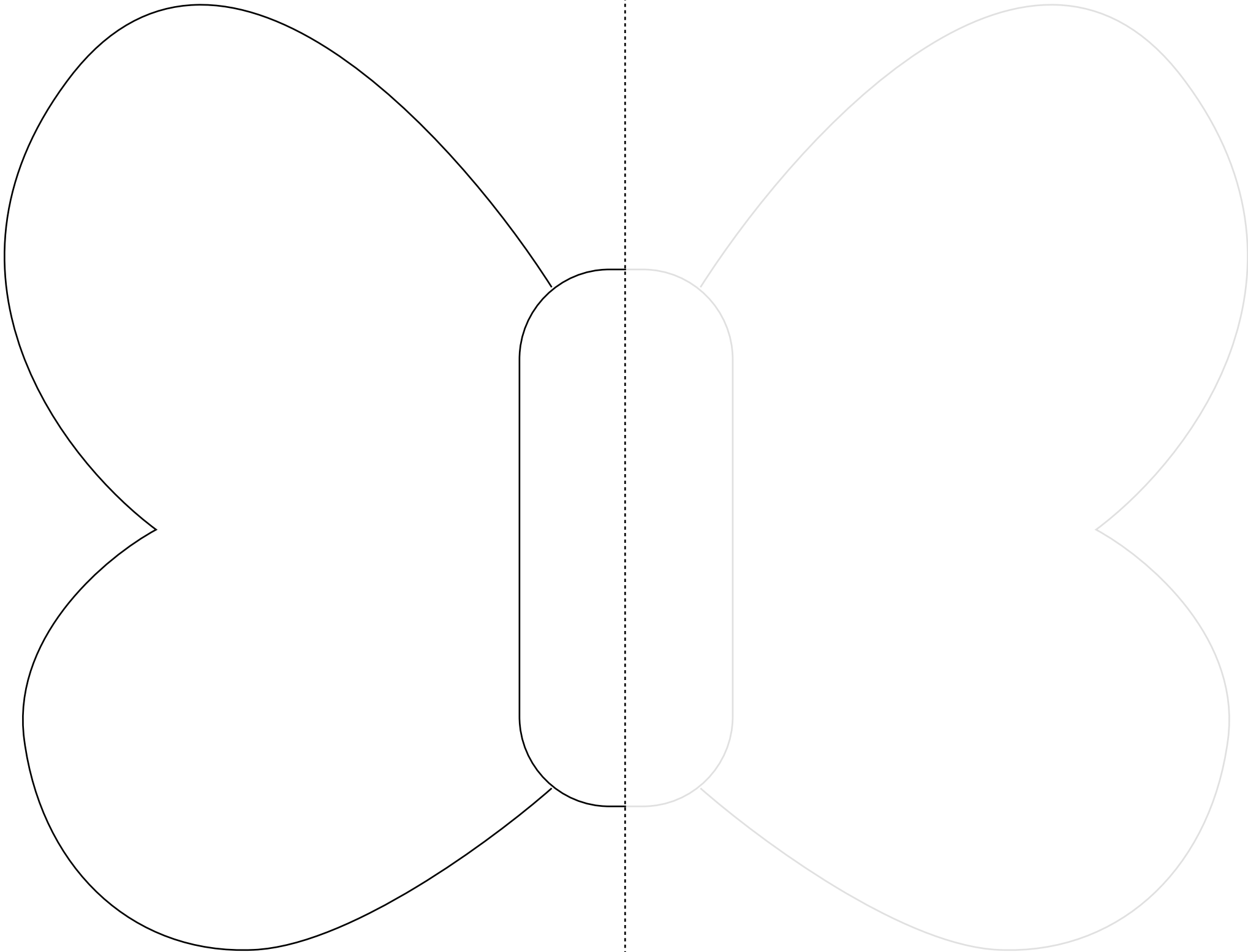
Press the paint sandwich together with your hands.



### STEP FOUR

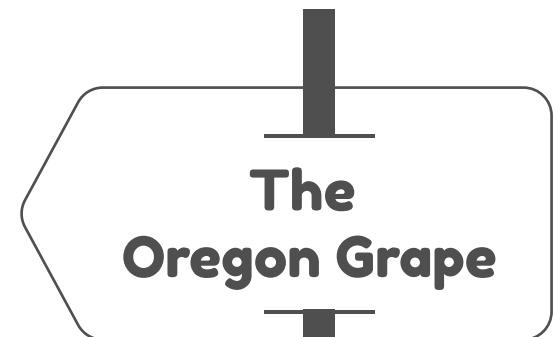
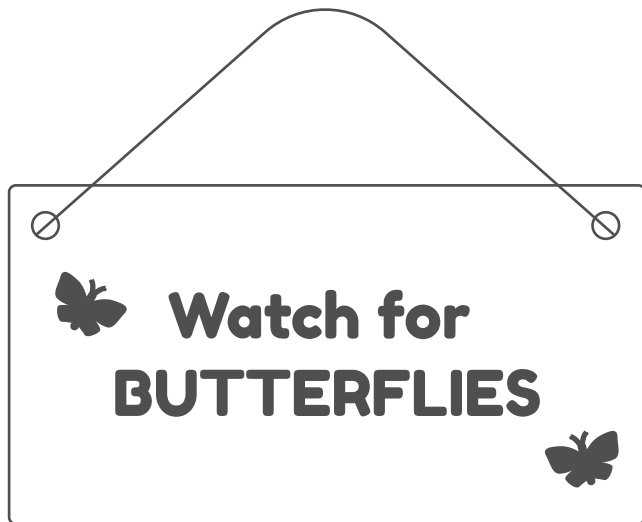
Open up the folded paper and you should have a unique and symmetrical design!

*Psst... once the paint has dried, you can cut the butterfly out!*



# DIY Garden Signs

Protect your school gardens with some DIY garden signs! Get creative and use items in the classroom or in the recycling bin.





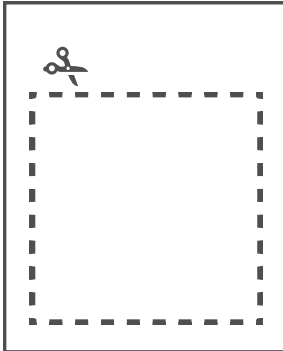
INSTRUCTIONS TO MAKE A

# Fortune Teller

Let's learn how to fold a fortune teller!

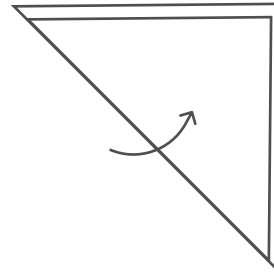
## STEP ONE

Cut on the dotted line and you will get a perfect square!



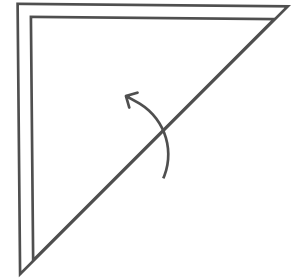
## STEP TWO

Printed side down, fold the square from corner to corner and then open it back up.



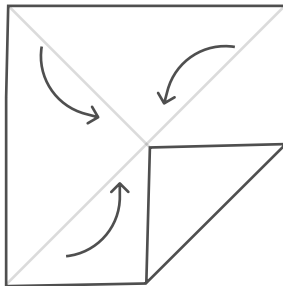
## STEP THREE

Fold from corner to corner in the opposite direction and open it back up again!



## STEP FOUR

Fold up all four corner so that the points meet in the middle. Flip it over.



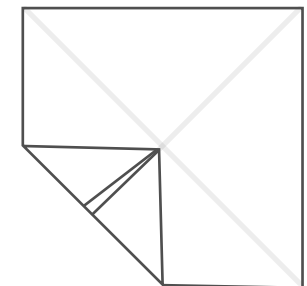
## STEP FIVE

Now, flip it over.



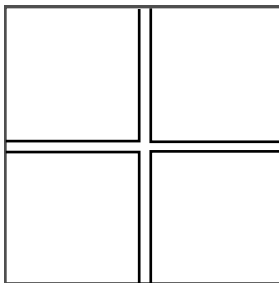
## STEP SIX

Fold up all four corners so that the points meet in the middle.



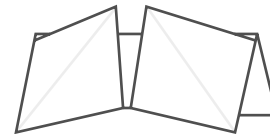
## STEP SEVEN

Flip it over again, and rotate it so it looks like a square.



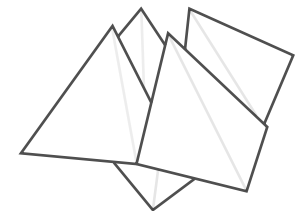
## STEP EIGHT

Fold the top back in half. Work your fingers into the four corner from the fold side.



## STEP NINE

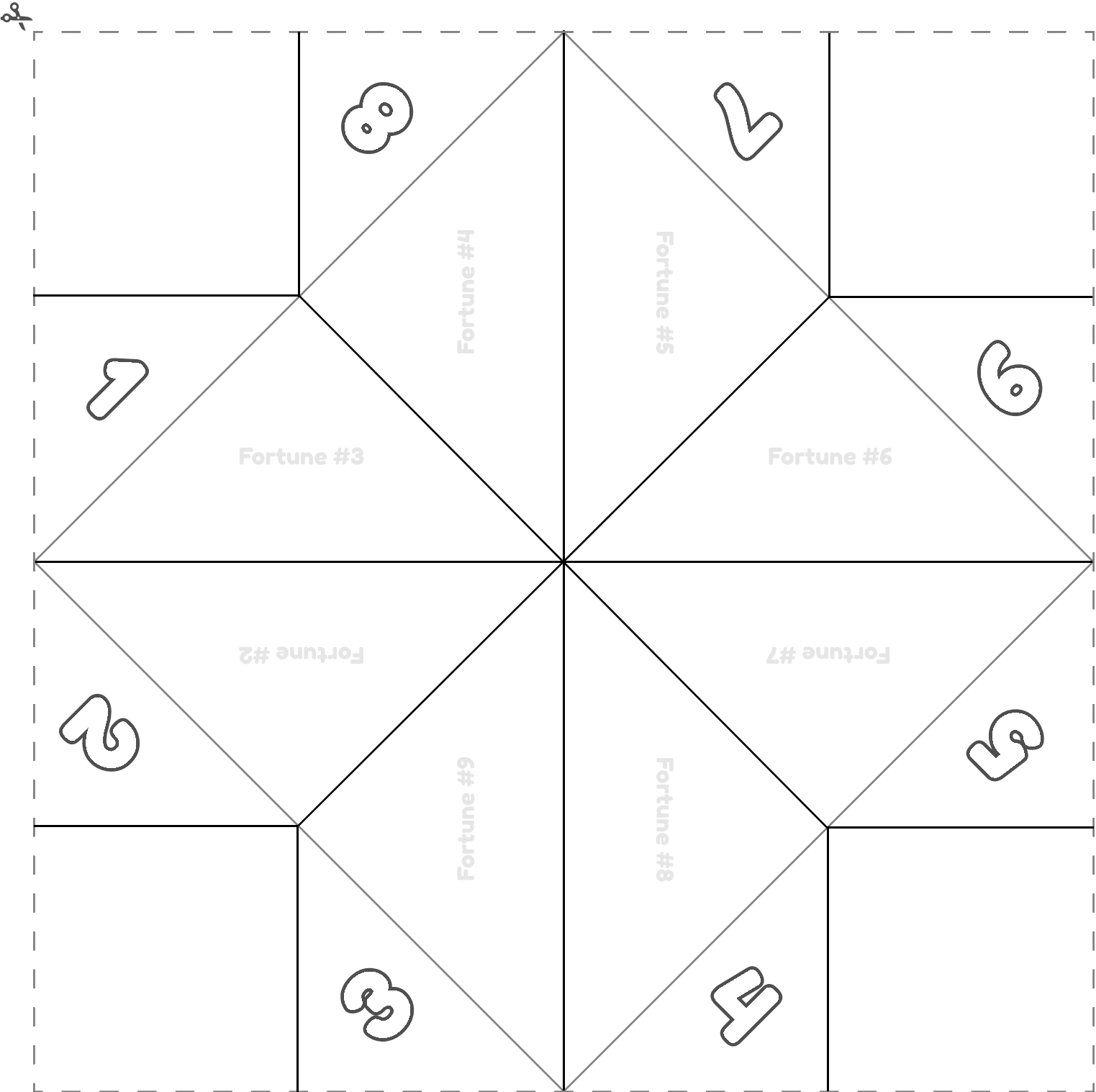
Work your fingers into the four corner from the fold side and there's your fortune teller!



# Make your own Fortune Teller

Make your own fortune teller! Get creative and think of fun pollinator, plant fortunes.

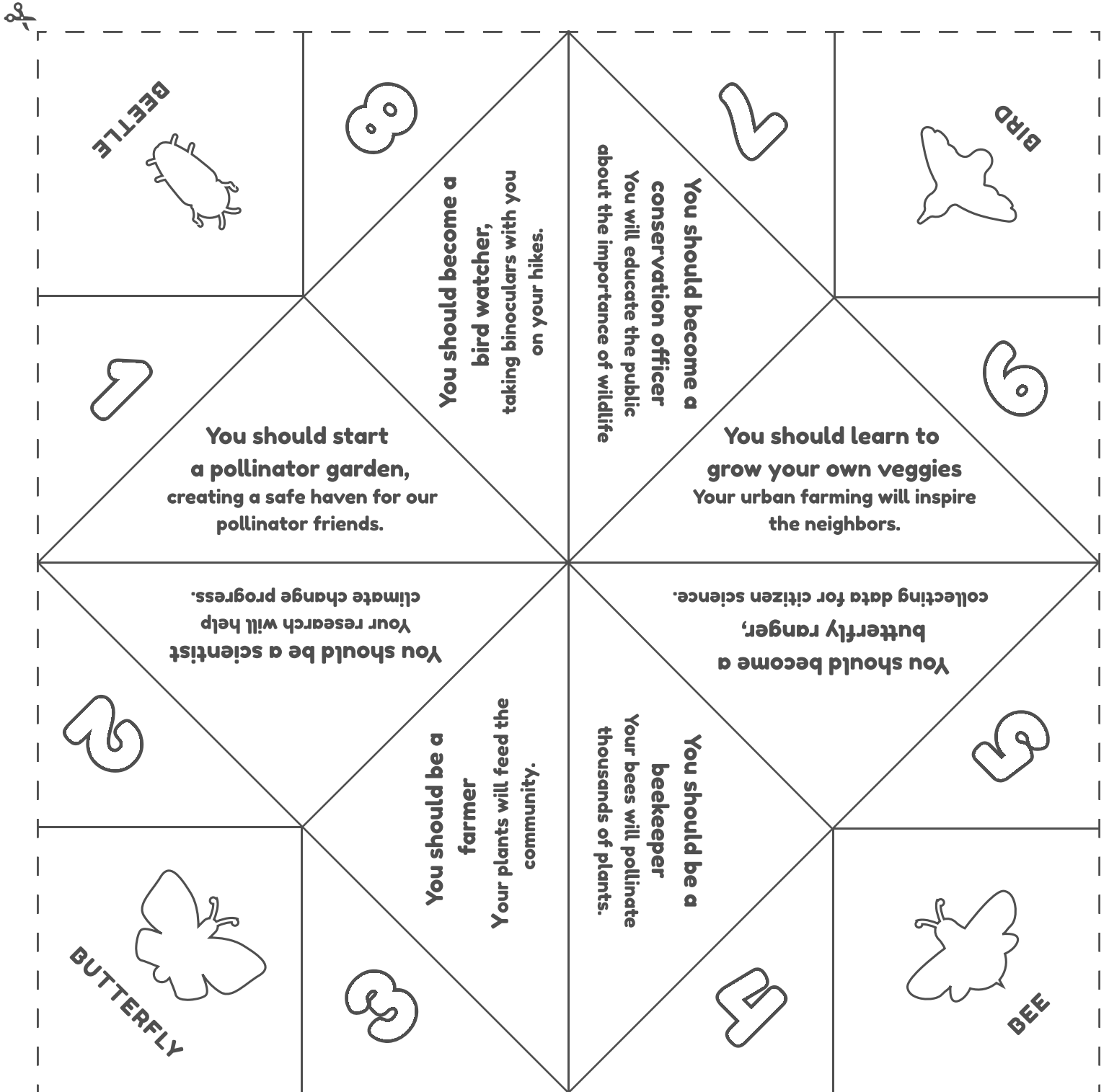
Follow the folding instructions!



# What will you be(e)? Fortune Teller

Can't decide how you will help the pollinators? Let this fortune teller point you in the right direction?

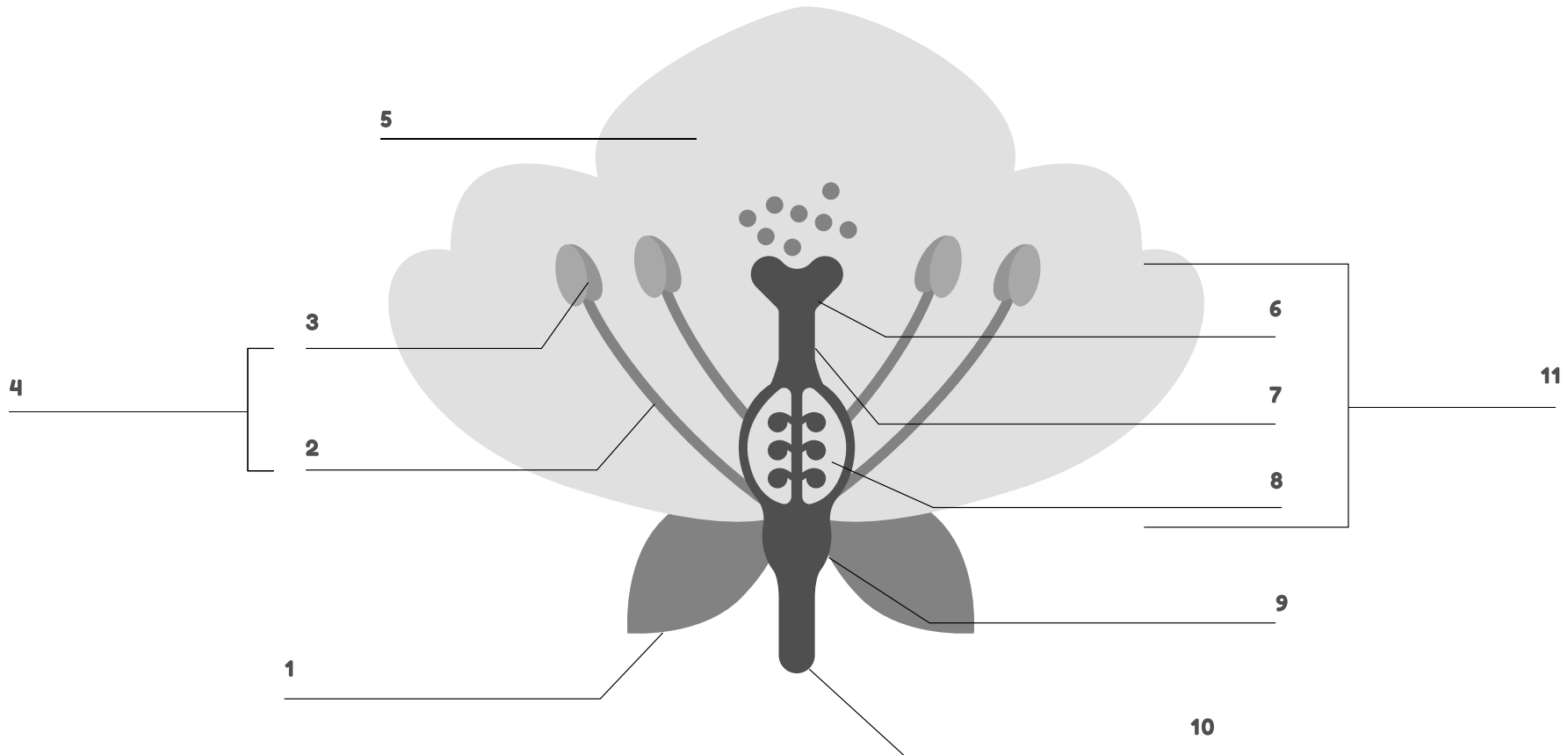
Follow the folding instructions!



NAME \_\_\_\_\_

# Parts of a Flower

Let's get to know the different parts of a flower.



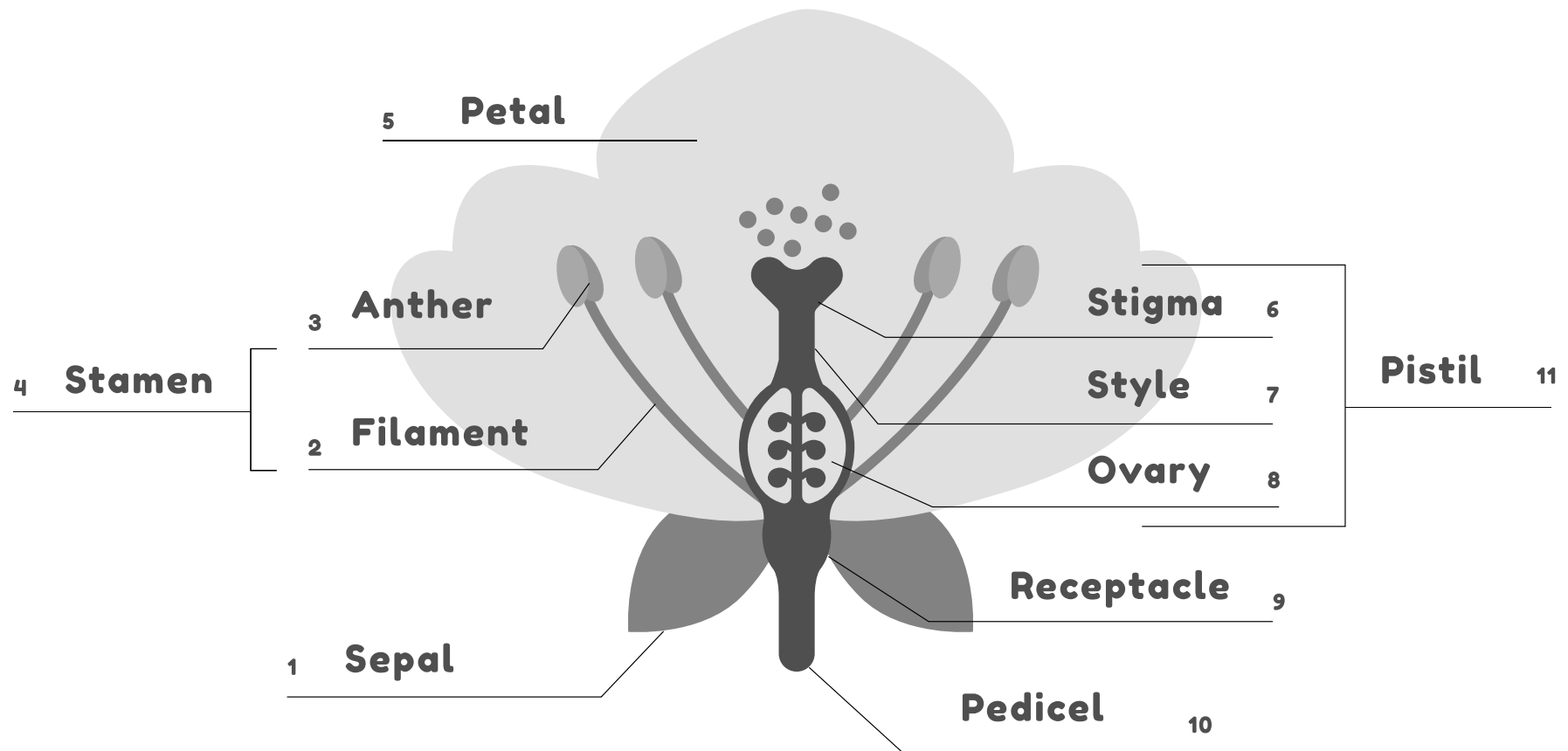
## WORD BANK

Style	Sepal	Stamen	Petal	Anther	Stigma
Ovary	Receptacle	Filament	Pistil	Pedicel	

ANSWER KEY

# Parts of a Flower

Let's get to know the different parts of a flower.



## WORD BANK

Style	Sepal	Stamen	Petal	Anther	Stigma
Ovary	Receptacle	Filament	Pistil	Pedicel	

# Plant Identification Checklist

How many of these BC pollinator plants can you find in your area? Bring this checklist around town and try to look for all of them!



Strawberry Tree,  
*Arbutus unedo*

Arbutus,  
*Arbutus menziesii*



Shrubby Potentilla,  
*Dasiphora fruticosa*

Red Osier Dogwood,  
*Cornus stolonifera*



Red Alder,  
*Alnus rubra*

Salmonberry,  
*Rubus spectabilis*



Ninebark,  
*Physocarpus capitatus*

Thimbleberry,  
*Rubus parviflorus*



Blueberry,  
*Vaccinium corymbosum*

Flowering Currant,  
*Ribes sanguineum*



Western Yarrow,  
*Achillea millefolium*

Nodding Onion,  
*Allium cernuum*



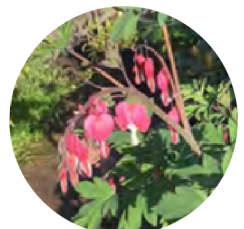
Pearly Everlasting,  
*Anaphalis margaritacea*

Common Camas,  
*Camassia quamash*



Douglas Aster,  
*Aster subspicatus*

Bleeding Heart,  
*Dicentra formosa*



Coastal Kinnikinnick,  
*Arctostaphylos uva-ursi*

Salal,  
*Gaultheria shallon*



Ocean Spray,  
*Holodiscus discolor*

Goldenrod,  
*Solidago multiradiata*



Hard Hack,  
*Spirea douglasii*

Virginia Strawberry,  
*Fragaria virginiana*

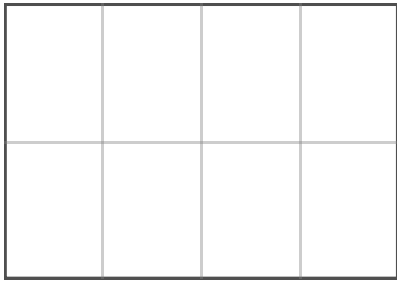


## INSTRUCTIONS TO MAKE A

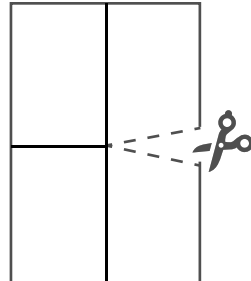
# Pollinator Field Guide

**Make a zine of the pollinators you learned about. Draw them out and write down some fun facts or observations!**

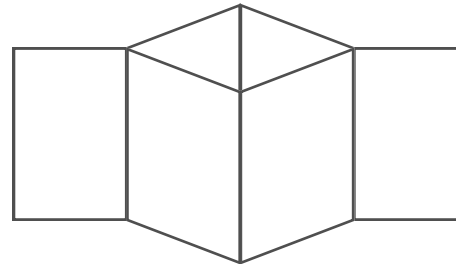
**Follow the instructions below to learn how to fold a zine. You can also design your own zine using a blank piece of letter-sized (8.5x11) paper. Unfold and scan your zine if you feel like distributing your field guide.**



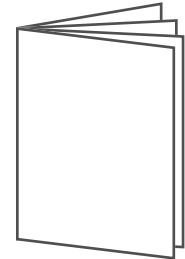
**1** **STEP ONE**  
Printed side up, fold your paper into eights and flatten it back out.



**2** **STEP TWO**  
Fold in half and cut from fold to 1st crease. Cut on the dotted line.



**3** **STEP THREE**  
Unfold and fold in half lengthwise. Then, open out the middle section.

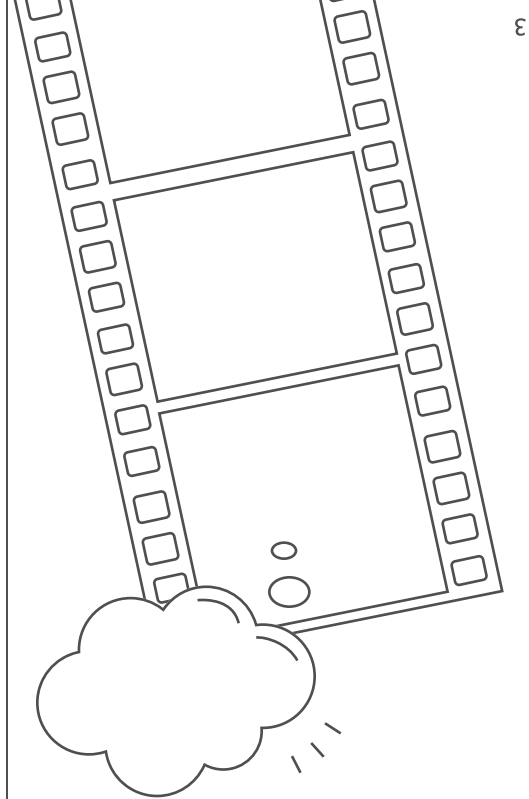


**4** **STEP FOUR**  
Fold the pages around to form a booklet!

4

Facts about the

1.



2

Facts about the

1.

1

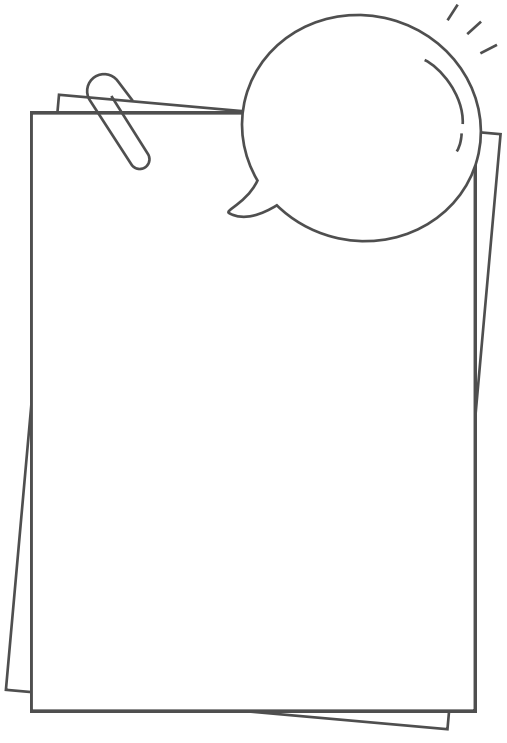
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HELLO  
This zine is made by

A FIELD GUIDE FOR THE POLLINATOR ENTHUSIAST

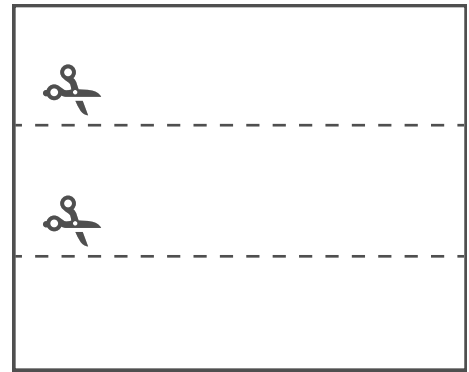
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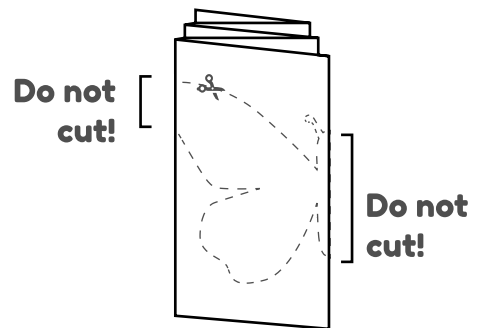
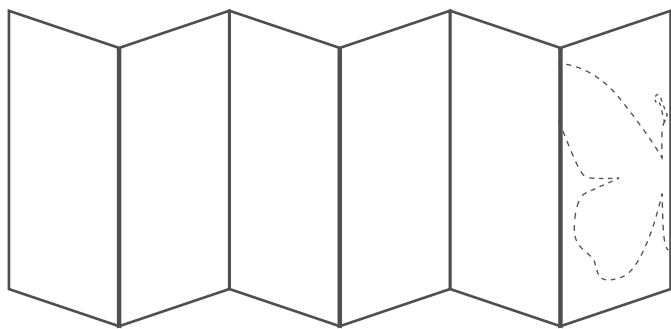


# INSTRUCTIONS TO MAKE A Pollinator Paper Chain

Decorate your space, desk, and room with these pollinator paper chains. Connect them to make a long garland- perfect for parties and celebrations!



**1** **STEP ONE**  
Cut on the two dotted lines.



**2** **STEP TWO**  
Take one of the strips and accordion fold along the gray lines.

**3** **STEP THREE**  
Cut on the dotted lines. Be careful not to cut the edges!



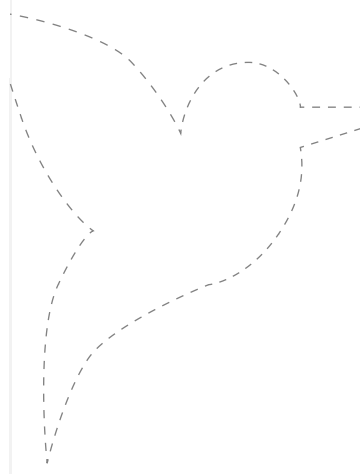
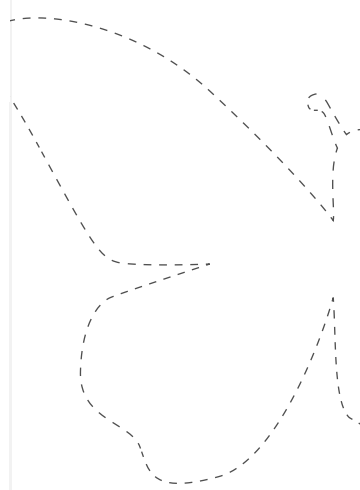
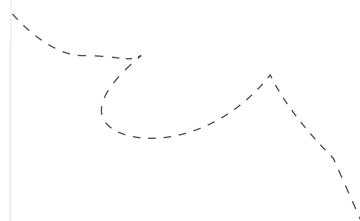
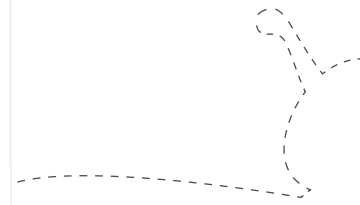
**4** **STEP FOUR**  
Unfold your accordion and reveal your chain!

**5** **STEP FIVE**  
Paint, color or decorate your chain.

**6** **STEP SIX**  
Make more and connect them with glue, tape or staples to make a loooooong chain!

**PST, HERE'S A TIP:**

Feeling creative? Make your own pattern- maybe some flowers, or leaves? Make sure a part of your design touches the folds of the paper on each side!



# Pollinator's Paradise

**Design a garden that you, your community, and pollinators would love to hang out in.**

.....

**Include features like paths, benches, ponds, bushes flowers and trees.**

.....

**Remember to think about what makes a garden pollinator-friendly!**

.....

**Feel like taking on a challenge? Take it one step further and consider the other wildlife that might enjoy the same space.**

**Need some inspiration?**


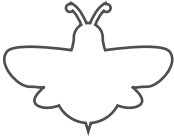
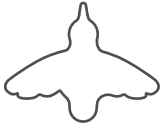



**Point your device camera at this QR code to be directed to the:  
David Suzuki Foundation's, "How to create a pollinator-friendly garden" page**

**Or try typing this into your browser:**  
<https://david Suzuki.org/queen-of-green/create-pollinator-friendly-garden-birds-bees-butterflies/>


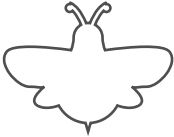
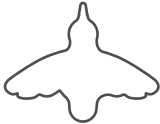

# Spottin' Pollinators

Count all of the pollinators you've seen with this tally sheet.  
Let's see which pollinator is most popular in your area!

 <b>BUTTERFLY</b>	 <b>BEE</b>	 <b>BIRD</b>	 <b>BEETLE</b>

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# Writing and Project Prompts

Take a deeper dive into the importance of pollinators with these topics and questions.

## Research-centered

- Describe different styles of pollination.
- What can the average person do to preserve our ecosystems?
- What are some of the problems our pollinator species are facing?
- Farmers are so important in society- describe some of the challenges that farmers today are facing.

## Creative thinking

- Imagine a world without pollinators.
- Imagine a world where we can cooperate and collaborate with our pollinators.
- Share your ideas on how we can improve pollinator conditions.

## Make your own prompt

Got an idea? Write it down before you forget.

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