

The Scottish SPCA's **ADVENTURE TAILS** Online learning resource pack



BOOK 2 – ANIMALTRONICS Design your own animal robot

This activity book belongs to:

.....



SCOTTISH SPCA
Scotland's Animal Welfare Charity



PAGE GUIDE

Introduction	Page 3
How to use this pack	Page 4
Curriculum links	Page 5
Step 1 – Research	Page 6
Step 2 – Mechanics & Interactions	Page 8
Step 3 – Design	Page 9
Step 4 – Build	Page 10
Step 5 – Robot World	Page 12
Step 6 – Advertise & Evaluate	Page 14
Detective Board	Page 15



Hi, I'm Gibson! Welcome back to the Scottish SPCA's Adventure Tails. Congratulations on completing the first stage on your quest to become a Scottish SPCA Animal Champion.

Remember, in order to be crowned an Animal Champion there are five colour stages to complete – **Orange**, **Blue**, **Pink**, **Purple** and **Green**.

A new colour stage will be released each month so keep an eye on our website (scottishspca.org/education-resources). To be Scotland's Animal Champion you must complete all coloured booklets in order so the **orange** booklet would be your first and the **green** booklet would be your last.

Did you see we also launched **#AnimalSmart**? Check out our social media channels as each week we will introduce you to some of the animals in our care, you will get the opportunity to ask questions to some of the team, such as our vets and those that help rehabilitate wildlife and so much more!

As for now, Martha and I have an exciting challenge for you where you can really show your creative side. So... shall we get started?!

MARTHA



GIBSON





HOW TO USE THE PACK



1. This pack is slightly different to the **orange** stage as we have set you a unique challenge!
2. Look out for me, Gibson, as I have lost some of my animal friends along the way so we need your help. Look at my clues and see if you can guess what the animals are. Use your answers to crack the code, complete this second booklet and unlock the next one.
3. If you can't guess what the animal is, take a sneak peak on page 15 as I have left you some clues.
4. You can either print off the pack and draw on it directly or use your own paper. Once you have completed all the steps and cracked Inspector Martha's secret code, take a photo of page 15, along with a photo of your completed animal robot prototype and share it with us. If you have printed the booklet and filled in the pages, you can scan these in or take photos and then ask your parent/carer to email us: education@scottishspca.org. Don't forget to include your first name, initial of your second name, class, school and local authority. For example I would be Gibson S, P7, Dogtastic Primary School, Edinburgh.
5. Complete our challenge and we will send you a certificate and you can then progress on to the next coloured stage.
6. Complete all five coloured stages and we will crown you one of **Scotland's Animal Champions**. Pssst....if at least 50% of the pupils at your school take part, you'll get the amazing honour of being one of the Scottish SPCA's **School Animal Champions 2020**.



CURRICULUM LINKS

We have made sure that our Adventure Tails booklets have lots of links to the Curriculum for Excellence so that you can impress your teachers with what you have learnt!

Health and wellbeing



Numeracy and mathematics



Expressive arts



Literacy and languages



Religious and moral education



Science



Social Studies



Technology



Psst... this particular challenge is a great link with



STEP 1 – RESEARCH

THE CHALLENGE

We want you to design your very own animal robot, build a prototype and think about how you would sell your design to a robotics company so that one day millions of people could buy your creation from a shop. To complete our blue Animaltronics challenge you need to compete all six steps and crack Martha's secret code to unlock the next booklet. Ready?...



First of all, what do you know about robotics?

Why not take a look at books such as 'The Iron Man' by Ted Hughes or even ask google?



- What can you find out about the history of robotics?
- When was the first robot created?
- How do we use robots in the modern world?
- Do some countries use robots more than others?
- Are there animal robots for sale in the shops?

Think about the types of animals we have living in Scotland and base your animal robot on one of these. Do some research, look at animals living around you. Most importantly use your imagination. Not sure which animal to choose? Here are some examples of animals that you may spot living close to you. Take some time to watch how they move, what they look like, what sounds they make and hopefully that will help inspire your amazing creation!



ANIMALTRONICS

Shortlist the animals you would like to make down to three using the table below to help you make your decision.

I would like to create this animal as a robot....	I want to create this robotic animal because...	Key features of that animal (How does it move? What colour is it, What sounds does it make? Where does it live?)	My choice of animal (Rank one - three with one being the animal you really want to make)



MYSTERY ANIMAL #1

I am born with white fur and I am around 3 weeks old before my fur is waterproof and I can swim in the sea.

Don't forget to record your animal trivia answers on page 15

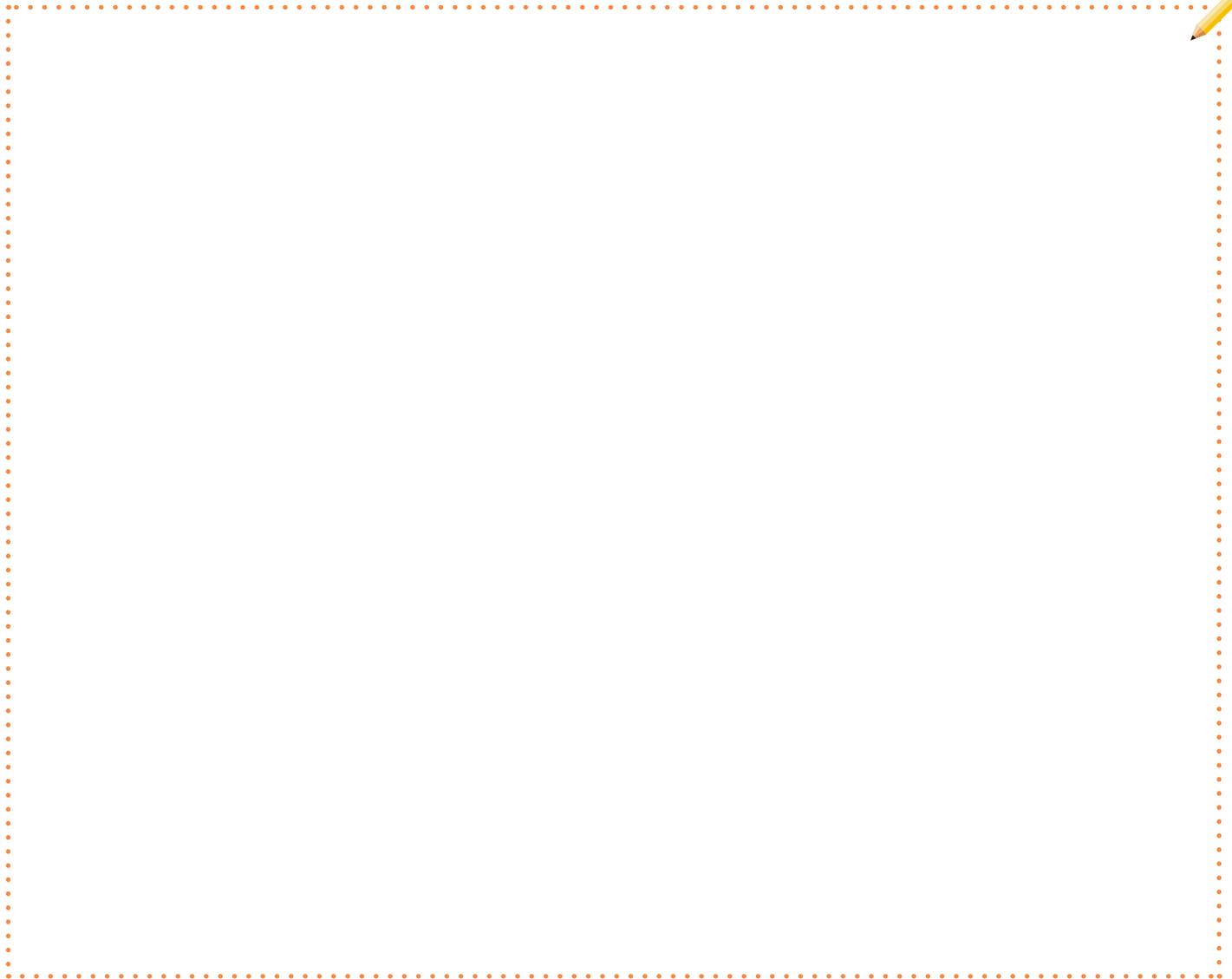
STEP 2 – MECHANICS AND INTERACTIONS

Now that you have chosen your animal, think about how your robotic animal will move. Consider the following:

-  Will it be on wheels? If so, how many?
-  Will it have legs? If so how many?
-  Does it have wings?
-  How is your animal robot going to interact with you and anyone else it meets, human or animal?
-  If you make a sound will it respond by moving away?
-  Will it be able to detect objects that are in front of it?
-  Will it respond to light?
-  Will it have any special powers?

Use the space below to sketch out your ideas

MY IDEAS



MYSTERY ANIMAL #2

I can fly as fast as 60 miles per hour and I have a wingspan of up to 2.5 metres.

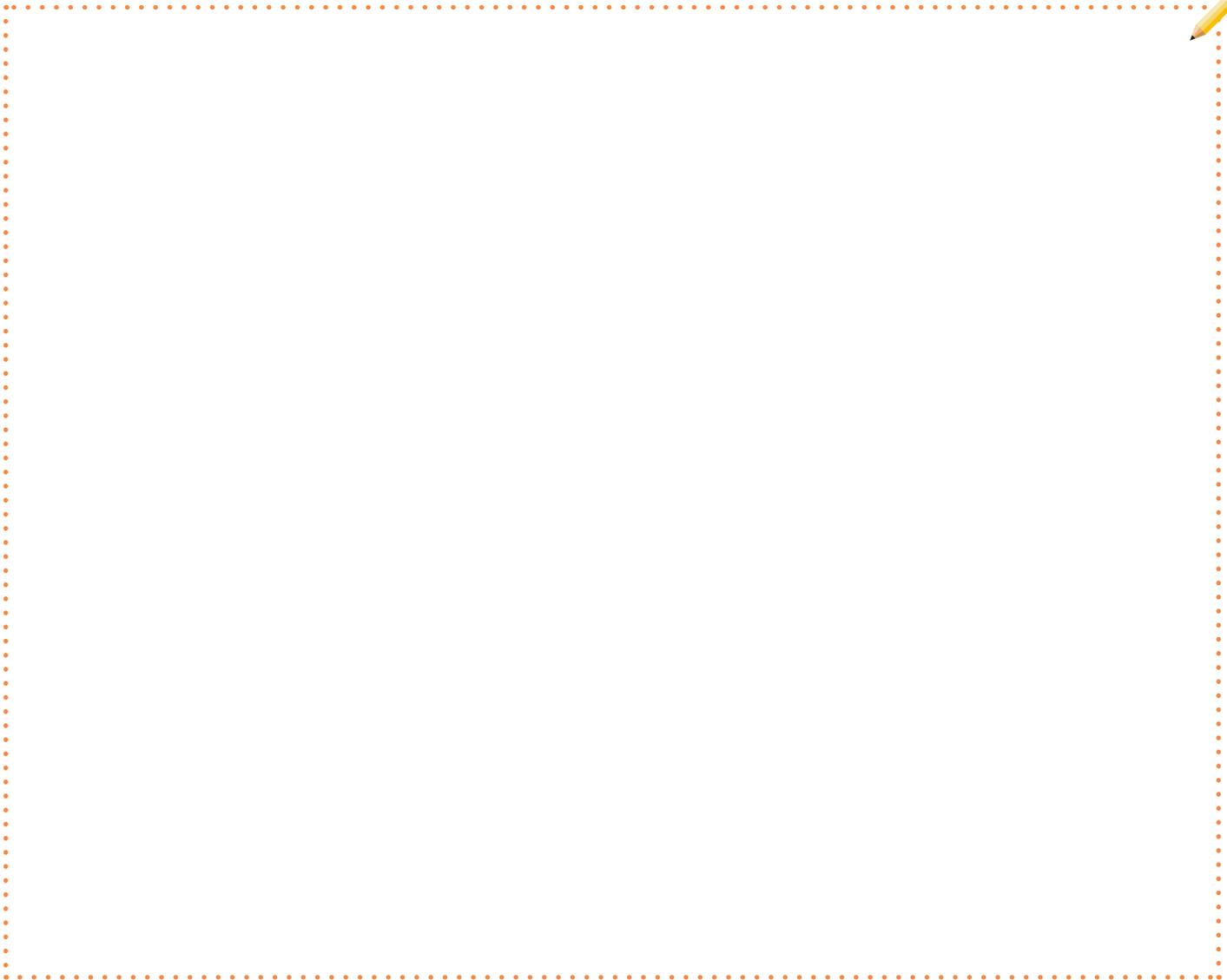
Don't forget to record your animal trivia answers on page 15

STEP 3 – DESIGN

Now that you have done your research, you will know what type of animal robot you would like to make a prototype of. You will have thought about how it should move and if it will use senses just like us (respond to sound, light). It is now time to design your amazing robotic animal! Consider the following:

- 🐾 What do you want your animal to look like?
- 🐾 Is it a mythical creature? What does mythical mean?
- 🐾 Practice drawing it a few times first then add your final design to the space below.

MY ANIMAL ROBOT



MYSTERY ANIMAL #3

My home is called a lodge and I can stay underwater for around 15 minutes.

Don't forget to record your animal trivia answers on page 15

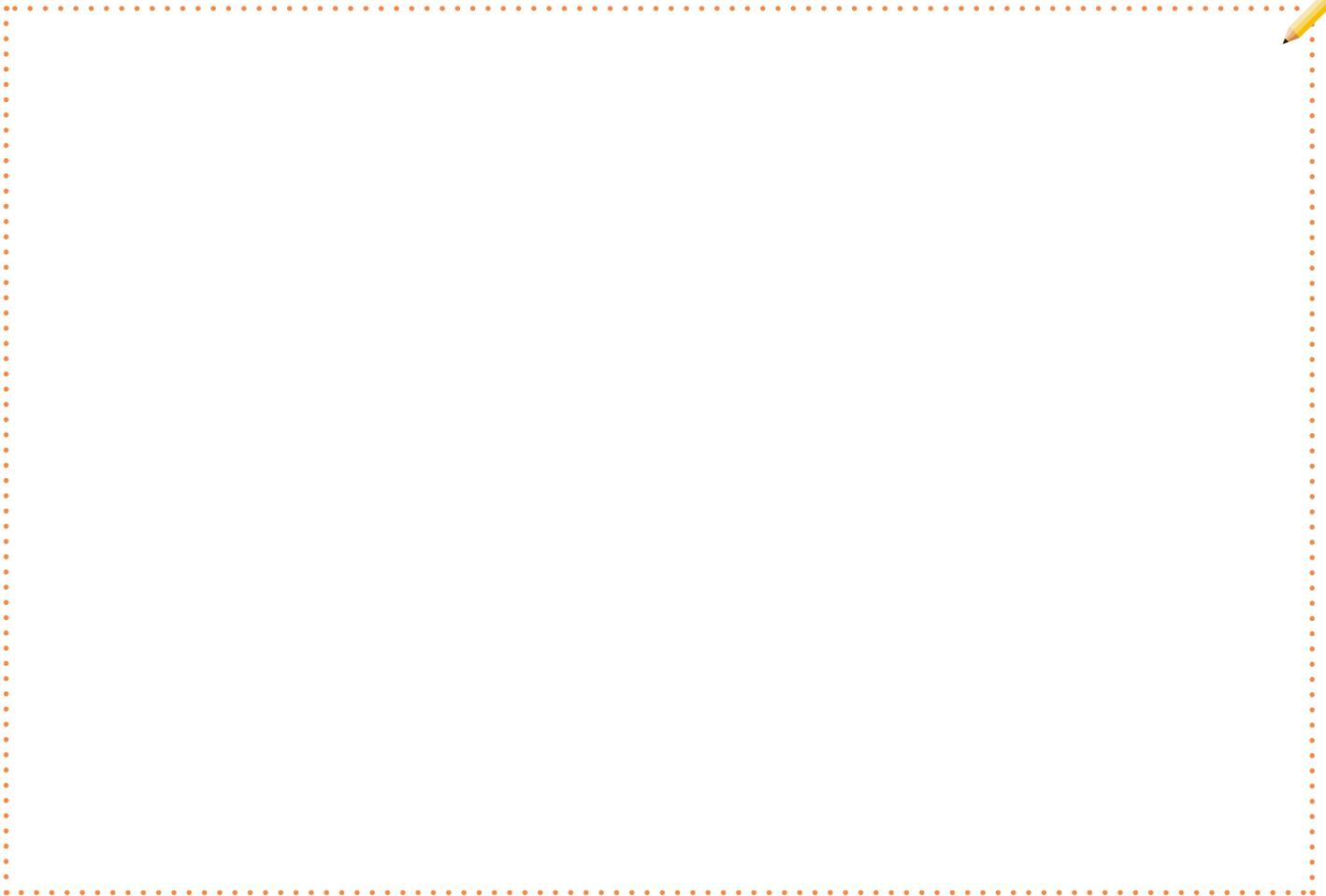
STEP 4 – BUILD

Now that you have your design ready it's time to build your prototype. Building a prototype is a great way to show someone your ideas. For example, you could take your prototype to a robotics company who could do the complicated stuff and get your animal moving and interacting with you. Before you start building think about the following:

- 🐾 How are you going to build it?
- 🐾 What materials would you use for your prototype?
- 🐾 Lego, cardboard, paper, Meccano?
- 🐾 What materials would you want a robotics team to make it out of?
- 🐾 If you could, how would you make it move?
- 🐾 Make sure you write the steps you took to make your prototype in the space below.

Use the space below to sketch out your ideas

MY PROTOTYPE



MYSTERY ANIMAL #4

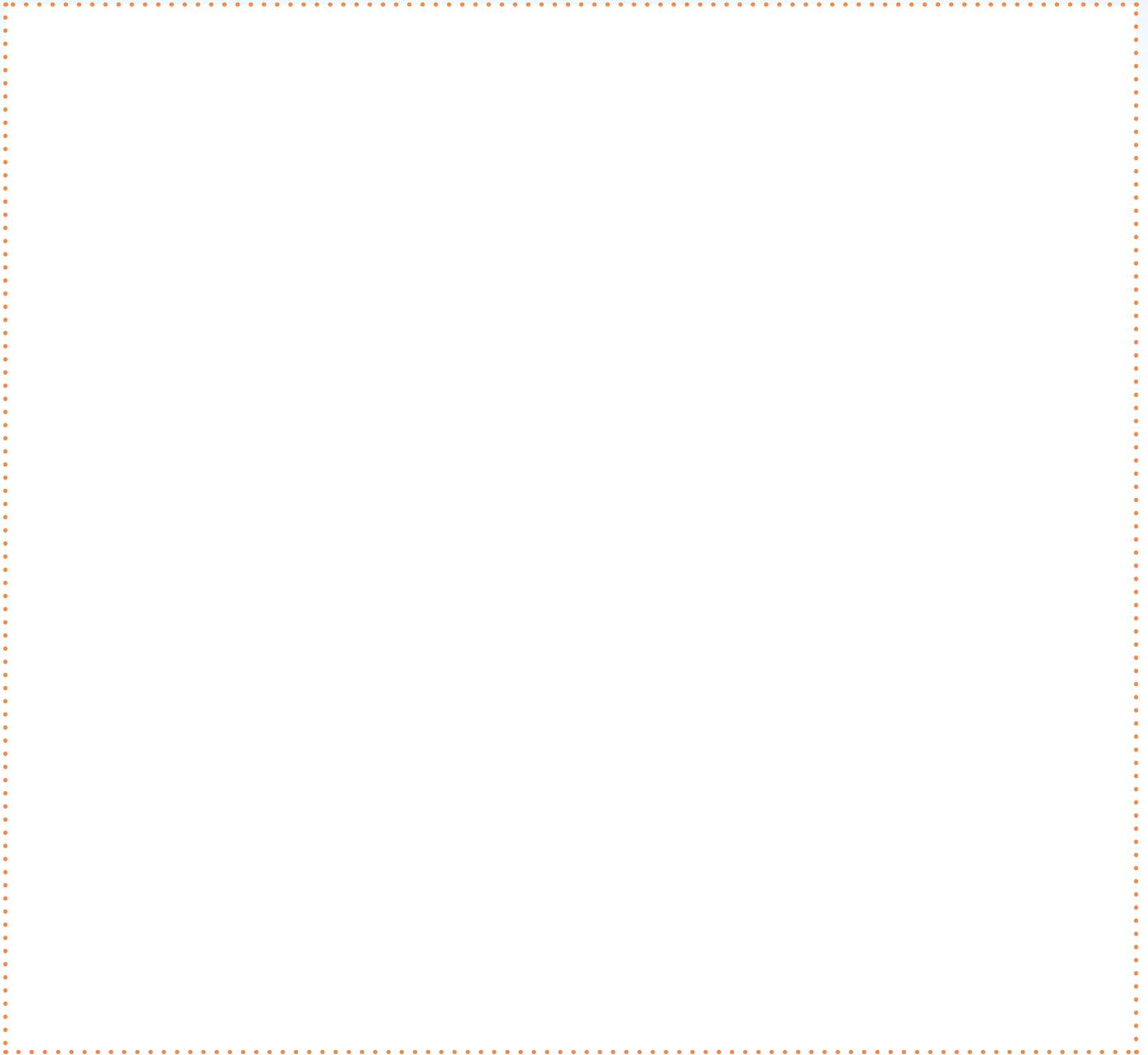
There are more of me than people in the world and I love to have dust baths.

Don't forget to record your animal trivia answers on page 15

STEP 4 – BUILD

Now take some photos of your finished robot. If you have printed this booklet you can print out the photos, cut them out and stick them in here. If you haven't printed the booklet, you can send your photos to us separately and we can add them into the space below.

MY FINISHED ROBOT



MYSTERY ANIMAL #5

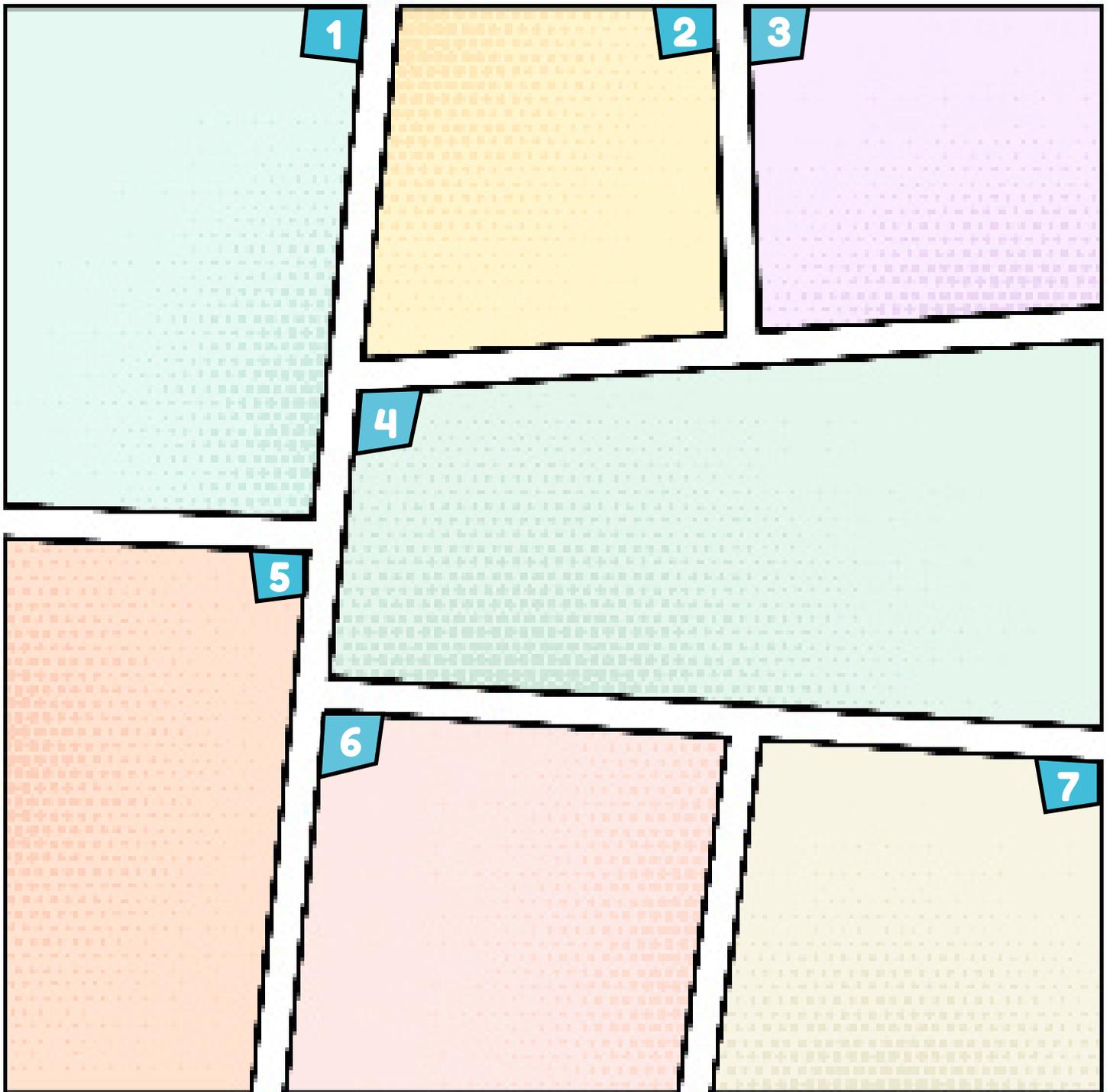
My front teeth can grow up to 3mm per week.

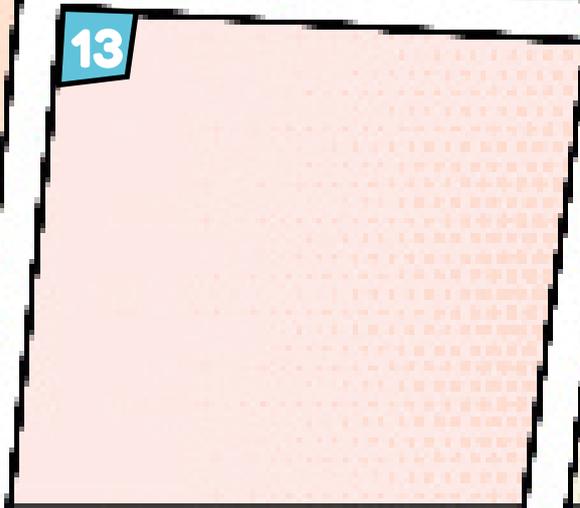
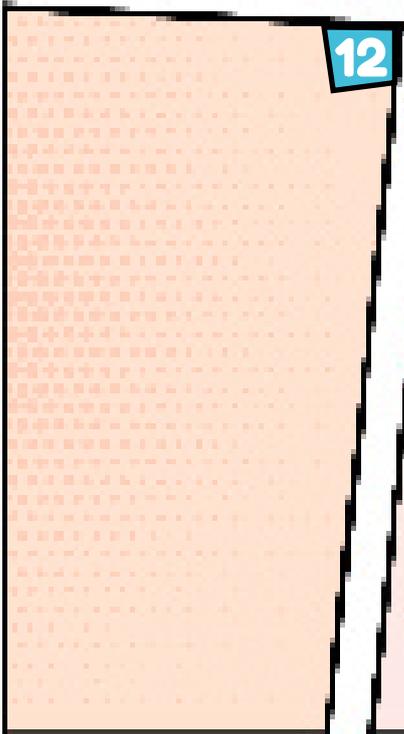
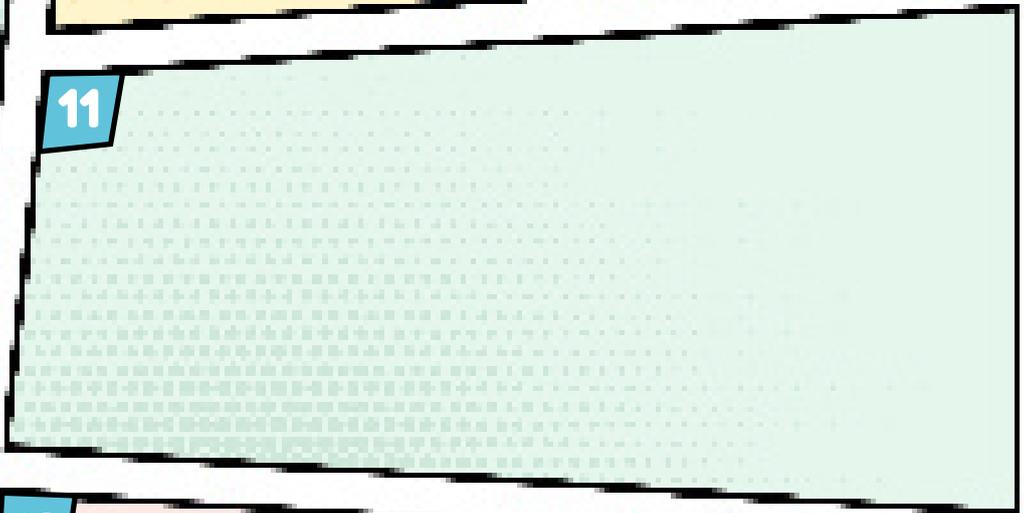
Don't forget to record your animal trivia answers on page 15

STEP 5 – ROBOT WORLD

What will your robotic animal get up to? There are many popular cartoons and films that feature robots (**T**ransformers, **R**escue **B**ots, **S**tar Wars, **I**, **R**obot, **L**ittle **R**obots and **W**all-**E** to name just a few!). Build a story around your animal robot by creating a cartoon strip using the template below. Again, practice drawing and decide on your story before you create it in the cartoon strip.

If you have printed this booklet you can draw directly into the boxes. If you are using your own paper you can scan or send in pictures and we can add them to these pages.





MYSTERY ANIMAL #6

My nest is called a 'drey' and I spend 75% of my time in trees and shrubs.

Don't forget to record your animal trivia answers on page 15

STEP 6 – ADVERTISE & EVALUATE

Advertise

So imagine that your prototype has been accepted by our Zoomtastic Robotics Company. They build it and then it is ready to be introduced to the world! Design the packaging that your animal robot would be displayed in. Think about the following:

-  How would you package your robot so anyone who saw it would be amazed and want to buy it?
-  Would you include your cartoon strip on the back of the box?
-  Would your robot have any other items for sale with it? A story book, collectable tokens or cards?

MY ANIMAL ROBOT PACKAGING



Evaluate

Congratulations!! you have successfully brought your animal robot to life. Think about all the steps you took to get to the end of this booklet. What worked well? What didn't work so well? Is your finished prototype exactly how you imagined it to be at the beginning?

Write some thoughts here:



MARTHA'S DETECTIVE BOARD

TRIVIA #	CLUE	ANSWER (A, B or C)	NUMBER OF LETTERS IN THE ANSWER
1	A. grey seal B. otter C. sea lion		
2	A. eagle B. swan C. seagull		
3	A. badger B. beaver C. hedgehog		
4	A. cow B. chicken C. pig		
5	A. rat B. guinea pig C. rabbit		
6	A. squirrel B. bat C. mole		
		TOTAL = secret code	

Amazing – well done! Take a photo of this page and share the secret code with us, along with photos of your animal robot. If you have printed the booklet and filled in the pages, you can scan these in or take photos and then ask your parent/carer to email us: education@scottishspca.org. Don't forget to include your first name, initial of your second name, class, school and local authority. For example I would be Gibson S, P7, Dogtastic Primary School, Edinburgh.

We would love to see pictures of how you have used this booklet and the things you have made so if you are happy for these to be shared on our social media channels then please email the photos to education@scottishspca.org with the subject "Please share my amazing creations."



Have you cracked Martha's secret code and helped unlock the next booklet? Follow the instructions above and we will let you know!





03000 999 999
scottishspca.org/education-resources



Scottish Society for the Prevention of Cruelty to Animals | Scottish Charity No. SC 006467



SCOTTISH SPCA
Scotland's Animal Welfare Charity