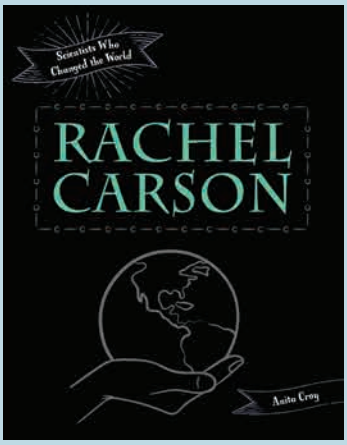
EK BOOKS
TEACHER NOTES & RESOURCES

Title: Rachel Carson
Subtitle: Scientists Who Changed the World
Author: Anita Croy
Publisher: EK Books
Price: ANZ $24.99
ISBN: 9781925820690
Publication date: June 2020
Audience age: 8 - 13+ years
Key Curriculum Areas: Science, Social Science, English Literacy, The Arts, Writing



SYNOPSIS:

A guide to the life of well-known scientist Rachel Carson. This book looks at her biography, her background in the natural world, her key breakthrough, her book *Silent Spring*, and her reputation and legacy.

KEY POINTS:

- A captivating account of a pioneering woman who saved the world from environmental disaster by alerting society to the danger of pesticides.
- Will intrigue any children with an interest in the natural world, and may inspire this interest in those who haven't yet come to appreciate nature's wonders.
- An excellent way to introduce children to non-fiction, and to teach them about society in the past, present and future.
- Part of a wonderful series that looks at some of the world's greatest scientists and teaches young people about science and society.
- Beautifully designed, with creative layout and colourful pictures to captivate the young reader.

SELLING POINTS:

Find out about how Rachel Carson saved the world from an environmental disaster in this informative, fun-filled biography for younger readers. Carson loved the natural world and thought it could give us a wealth of knowledge. With colourful illustrations, varied page layouts and quirky design, this book will captivate and enthral any child with an interest in the environment, and may even inspire this interest in those who haven't yet come to appreciate nature's wonders.

Learn what the work of brilliant scientist Rachel Carson can tell us about life and society. From writing about the ocean like a poet, to exposing the danger of pesticides to the world, Carson led an extraordinary life. Discover more about the world we live in by reading her fascinating story!

TEACHER ACTIVITIES/NOTES:

This book may be used in whole class, small group or independent learning activities in schools.

Please note, the following suggestions and activities are suited to a variety of year levels spanning from to Year 5 primary aged children up to Year 7 (13+). Where possible, Australian Curriculum goal codes have been included which address learning outcomes and apply directly to the targeted audience intended for this book.

Knowledge and Literal Understanding

Before Reading (Interpreting, analysing, evaluating)

Brainstorm as a class or in groups (only use prior knowledge, don't research):

- Who is Rachel Carson?
- When and where was she born?
- What is she well known for?
- List any other information students know about her

Inferential and Critical Thinking

After Reading (Responding to text)

Ask the students:

- What are the students' impressions of Rachel Carson's life?
- Did anything surprise or shock them?
- What would life be like if Carson had Carson hadn't produced her key works?
- If you met Carson, what questions would you ask him?

CROSS-CURRICULAR DISUSSION AND IDEAS

ENGLISH LITERACY SKILLS

Vocabulary

Expressing and developing ideas

Understand the use of vocabulary to express greater precision of meaning, and know that words can have different meanings in different contexts

Look at the glossary.

- List the words and definitions of the words that you have learnt for the first time today. Include a small image or code to help you remember what the words mean.
- Choose 5-10 words and use a thesaurus or a thesaurus online to write 5 synonyms for each word.

TEACHER NOTES: Rachel Carson

Literature

Literature and context

Identify aspects of literary texts that convey details or information about particular social, cultural and historical contexts.

- Using the content in the book, create a timeline of Carson's life, including his key works.
- On page page 50-51, five of the twentieth-century biologists and environmentalists are briefly mentioned. Choose one person and learn more about them, then display this information in any way you choose.

SCIENCE

Science as a Human Endeavour

Use and influence of science

Scientific knowledge is used to solve problems and inform personal and community decisions.

- Carson was very involved in the campaign against the threat of pesticides. Explain the two different viewpoints. You can use text, images, a slideshow or animation.
- Carson was also very involved in the campaign against DDT. Explain what the campaign against DDT was all about, including the timeline. You can use text, images, a slideshow or animation.

Nature and development of science

Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena. It reflects historical and cultural contributions.

- Using the video 'Cartoon for Kids! Who Rachel Carson! Science for Children' https://www.youtube.com/watch?v=XAqtfMlNgN8 (4.49 minutes), and the content from the book, present what you have learnt about Carson's life, knowledge and discoveries.

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available.

- As early as 1950, Carson was warning the world about the dangers of global warning. Explain why you agree or disagree with global warming. Write about this debate using dialogue or list the opinions that each side expressed.

Science Inquiry Skills

Evaluating

Use scientific knowledge and findings from investigations to evaluate claims based on evidence.

- Explain Carson's unfinished campaign. List ways your school and home can help to fight climate change.

Environmental Science

WORKBOOK

NAME:

TABLE OF CONTENTS

name:

OUR SCIENCE VOCAB

Environment:

Biodiversity:

Why is **Biodiversity** important in an **Environment**?

Draw a **Biodiverse Environment**:

RESOURCES:

Draw a **Renewable** Resource example:

Draw a **Non-Renewable** Resource example:

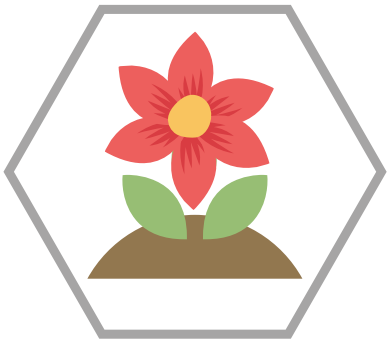
Sustainability:

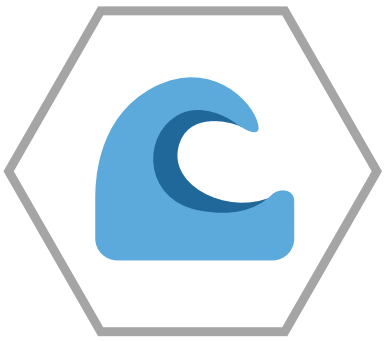
How can we live **sustainably**?

POLLUTION:

3 Types of Pollution:

What can we do to prevent each type of **Pollution**?





Think about some ways that you can change your lifestyle to be more **environmentally aware**.

ENERGY

WASTE

FOOD

TRANSPORTATION

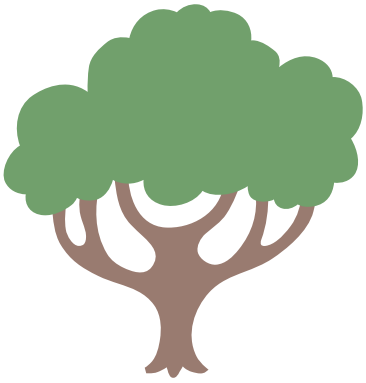
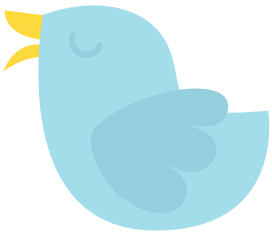
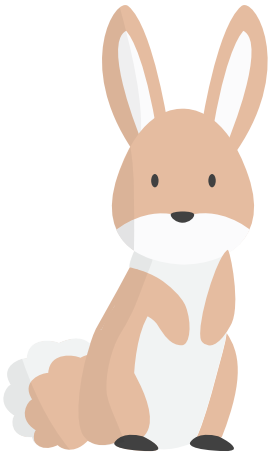
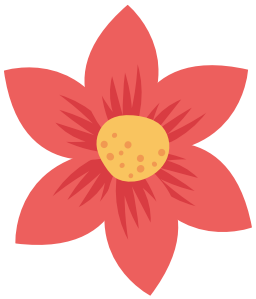
WATER

BONUS!

name:

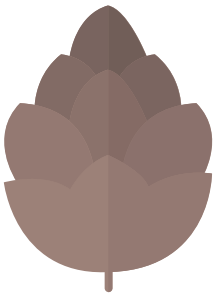
ANIMAL COMMUNITIES

Draw a line to any plant or animal that you think interacts with one another.






name:

HUMAN COMMUNITY

Define the words below. Think about how we can solve these problems in our community.

Homeless:

Shelter:

Poverty:

Food Security:

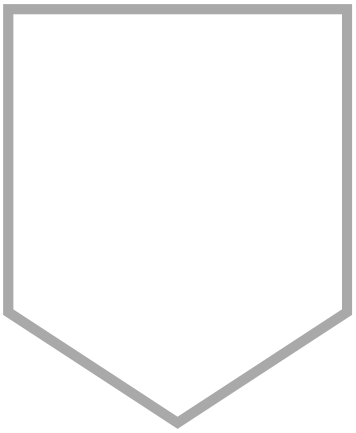
What can we do to help our Local Community?

Volunteer:

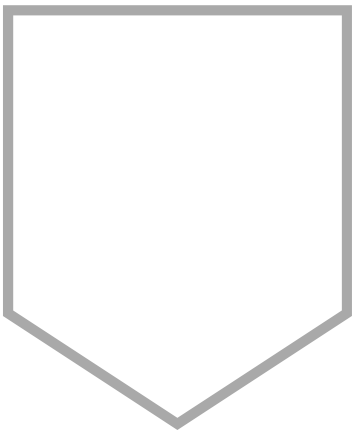
name:

WASTE MANAGEMENT

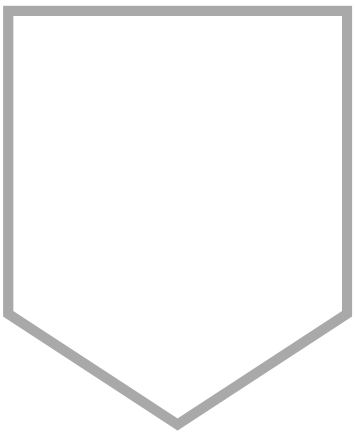
1. Reduce:

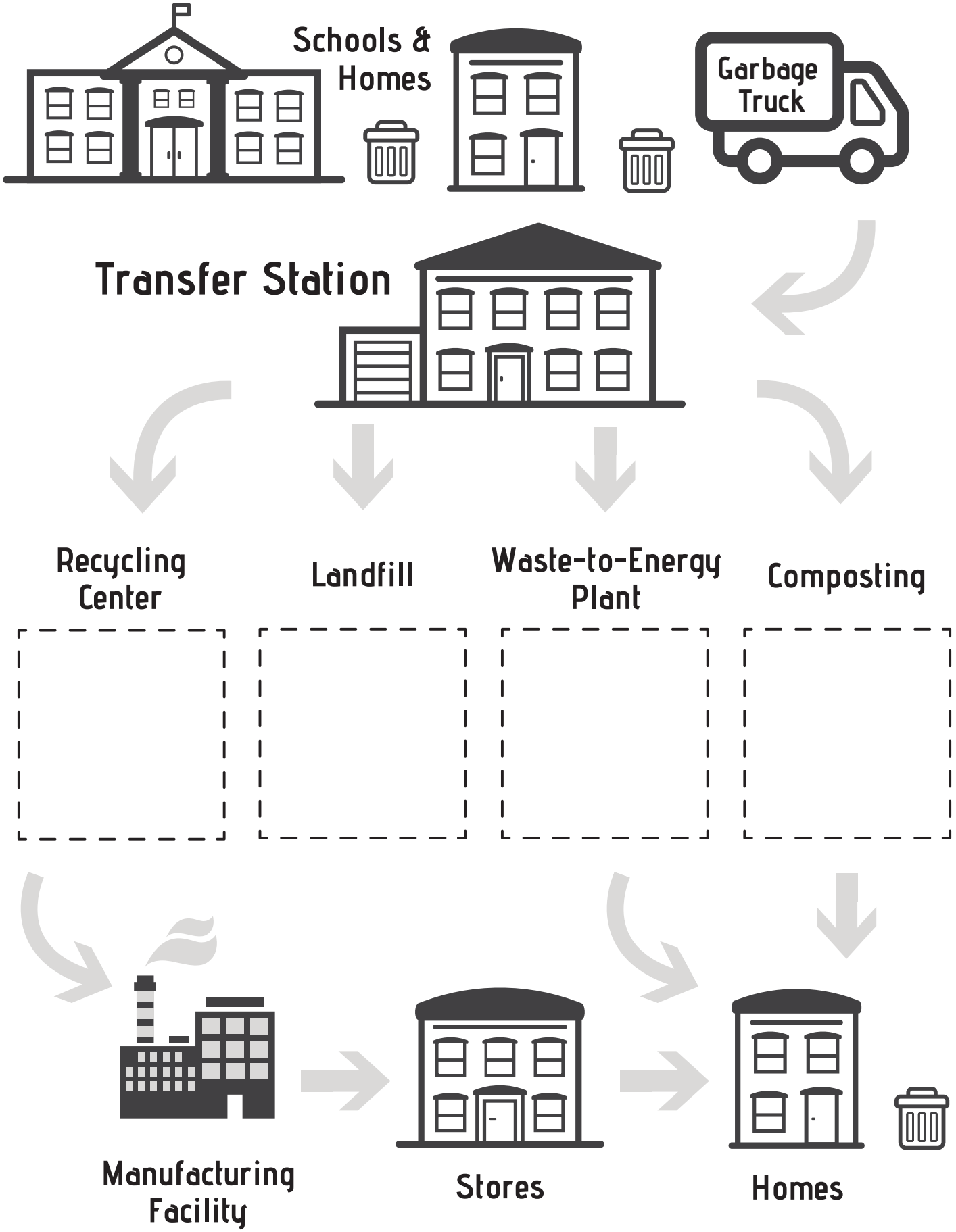


2. Reuse:



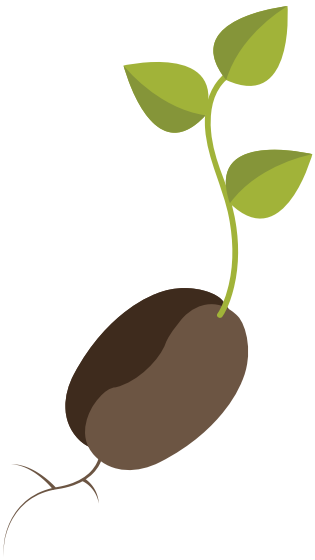
3. Recycle:

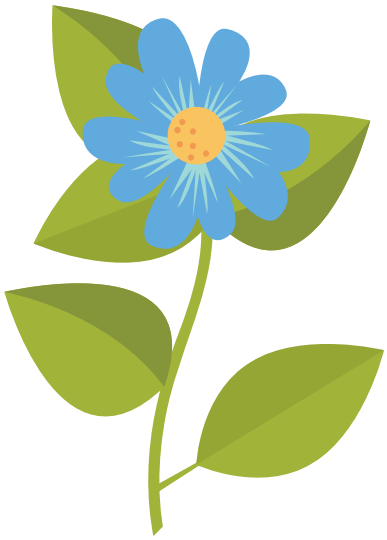



Schools &
Homes
Garbage
Truck
Transfer Station
Recycling
Center
Landfill
Waste-to-Energy
Plant
Composting
Manufacturing
Facility
Stores
Homes

name:

PLANT CYCLE





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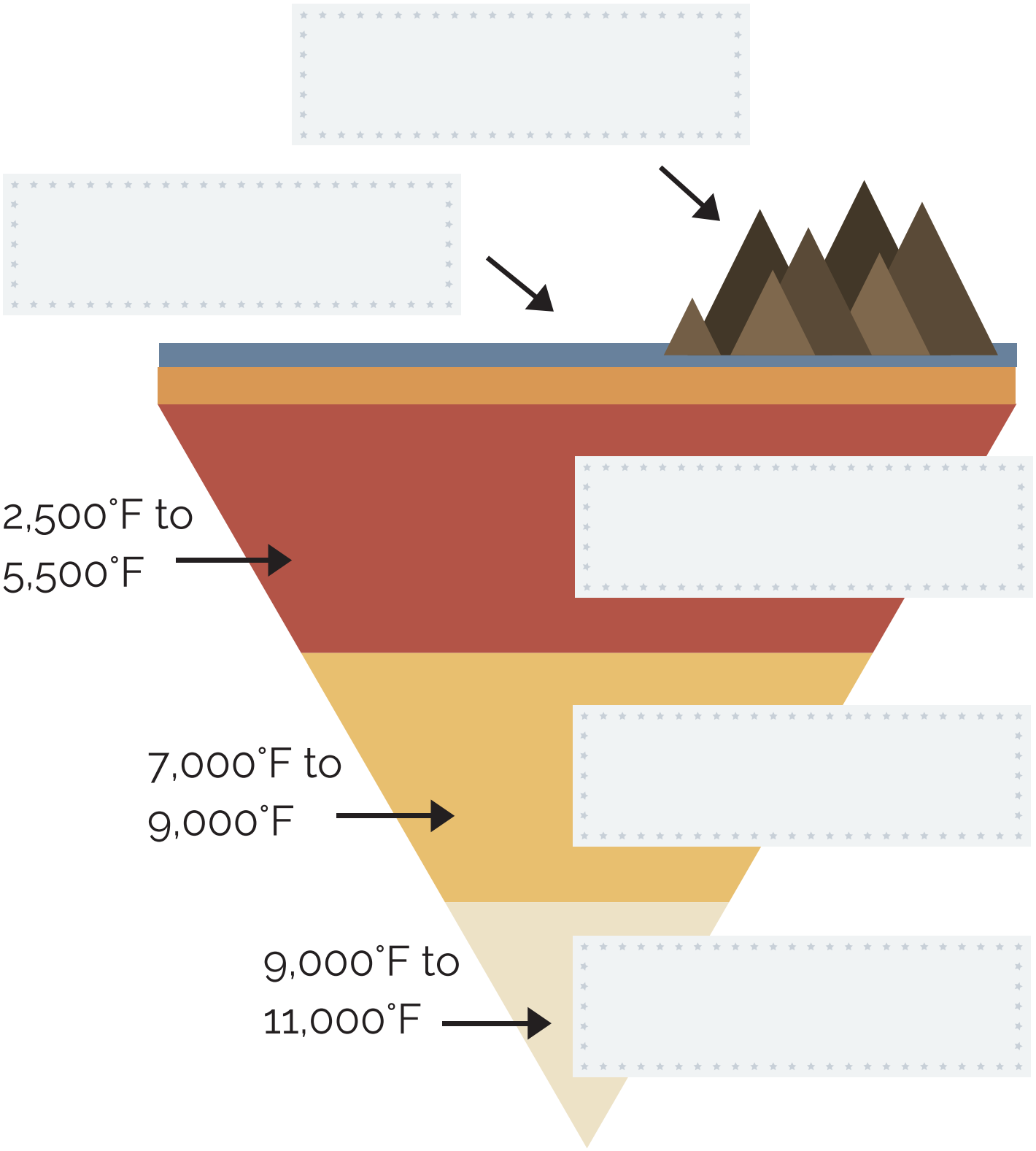
EARTH'S LAYERS



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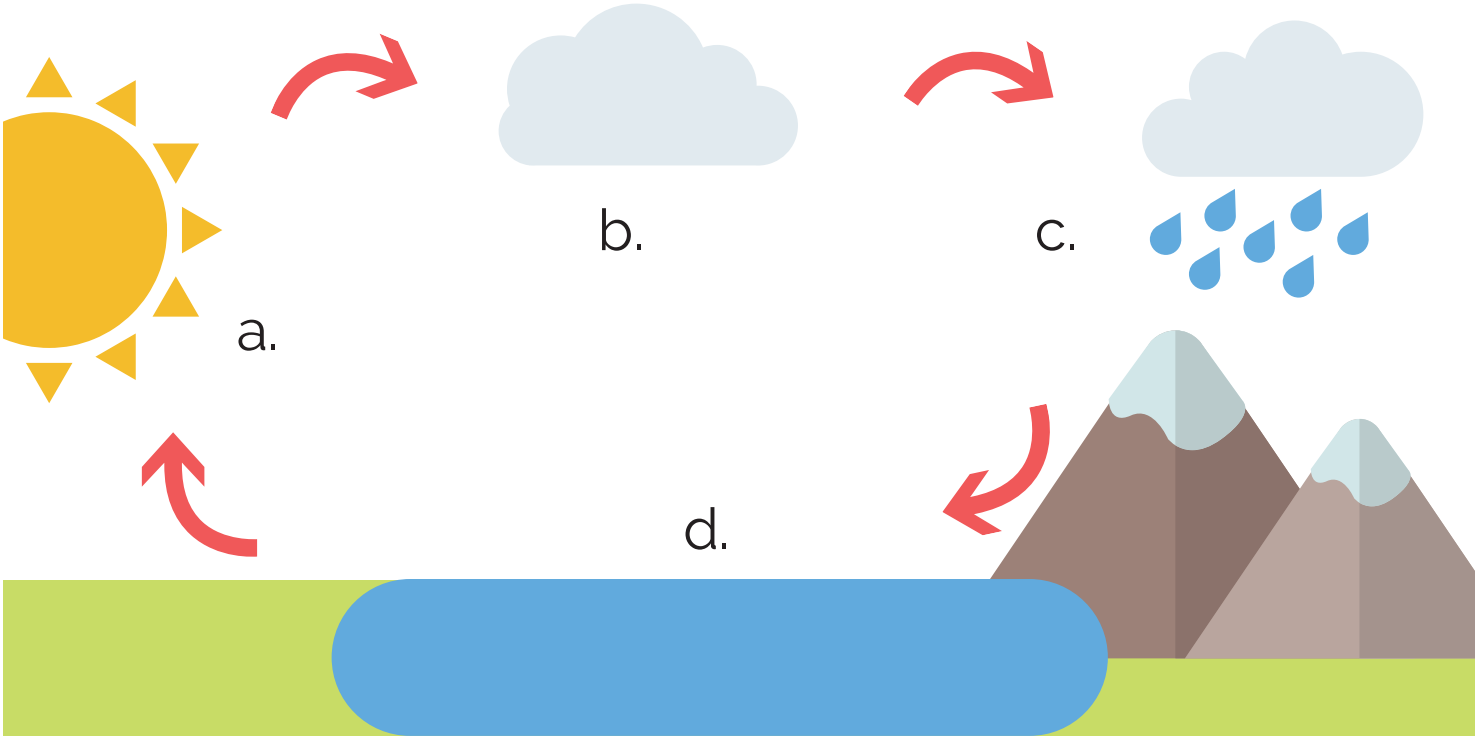
WATER CYCLE



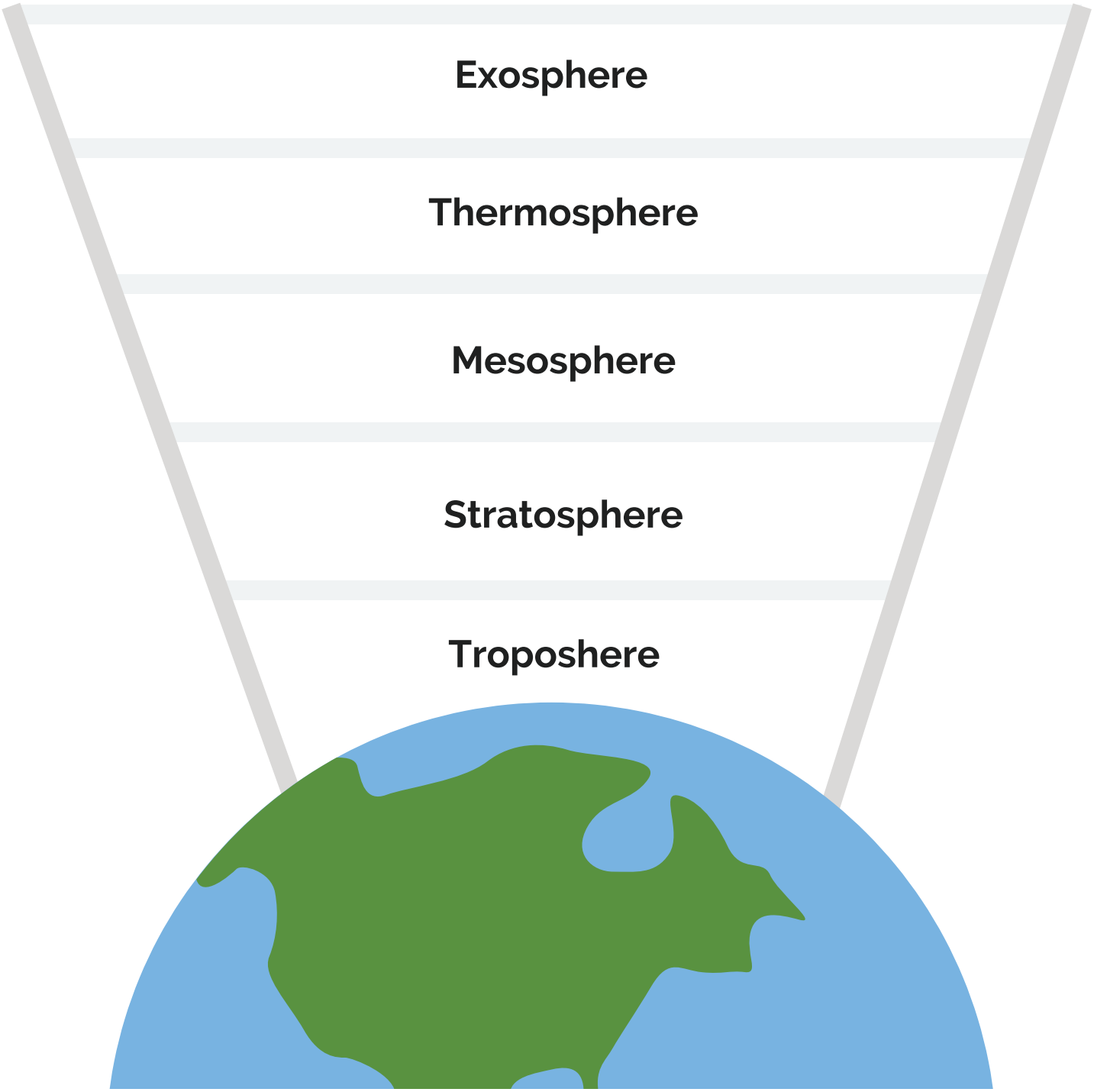
impacted by....

- [ ] Condensation
- [ ] Precipitation
- [ ] Collection
- [ ] Evaporation

name:

ATMOSPHERE LEVELS

Explain the differences between levels based on drawings



name:

ANIMAL FAMILIES

Reptiles

Amphibians

Mollusks

Arthropods

Fish

Birds

Cnidarians

Mammals

What Animal Family do **Humans** belong to?

name:

ANIMAL TRACKING

1. 2. 3. 4. 5.

6. 7. 8. 9. 10.

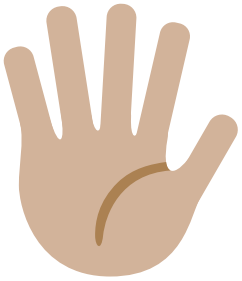
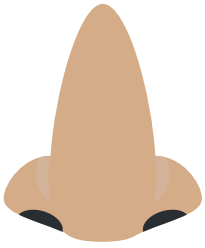
11. 12. 13. 14. 15.

ANSWER KEY

a. rabbit
b. bird
c. cow
d. elephant
e. lion
f. deer
g. squirrel
h. pig
i. duck
j. monkey
k. sheep
l. bear
m. dog
n. hamster
o. lizard

name:

SENSIBLE CRITTERS

	offense:	defense:
		
		
		
		
		

name:

ZOOS & AQUARIUMS

Pros	Cons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Animal:

Natural Habitat:

Design a considerate Zoo enclosure for your chosen animal below. Include all of the following in your design:

1. Food & Water **2. Space** **3. Community** **4. Entertainment**

name:

ENDANGERED ANIMALS

Review reasons for animals becoming endangered/extinct.

Habitat Loss

I llegal Wildlife Trade

Climate Change

Conflict between Human & Wildlife

Underwater Bycatch

Pollution

Species: Invading the Ecosytem

Endangered:

example:

Extinct:

example:

How can we prevent the **Extinction** of animals?

H -

I -

C -

C -

U -

P -

S -

Design a **Producer:**

- Energy from the Sun
- Method of Defense
- Stationary

Design a **Primary Consumer:**

- Eats the Producer

Design a **Secondary Consumer:**

- Eats the Primary Consumer

Design a **Tertiary Consumer:**

- Eats the Secondary Consumer

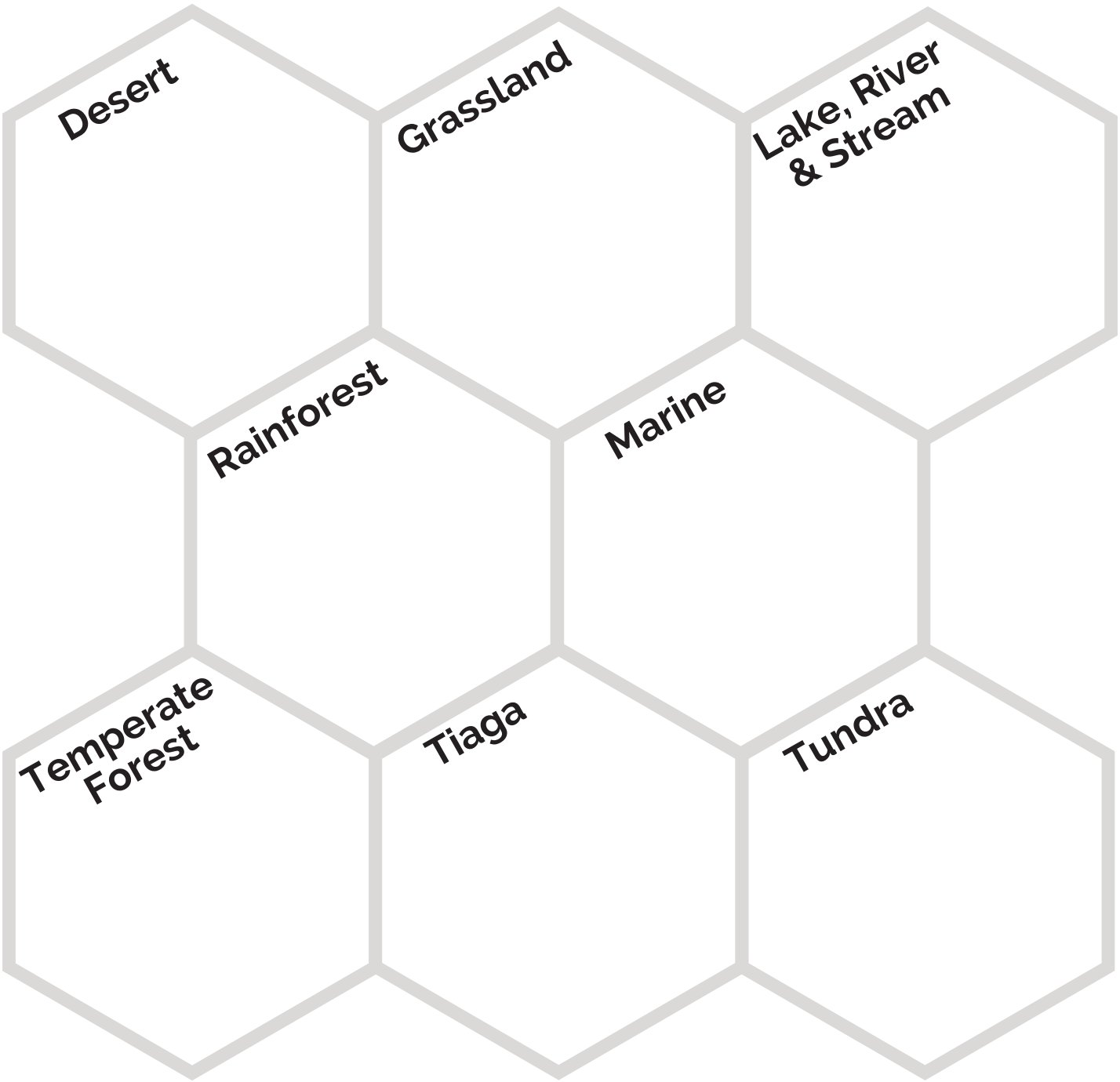
Design an **Apex Predator:**

- No Natural Predators
- Top of the Food Chain

name:

ECOSYSTEMS & BIOMES

Illustrate the given biomes or write **key words** to help remember them!



organism	population
community	
ecosystem	
biome	

name:

U.S. NATIONAL PARKS

Examine each National Park and its **native species**. Match the correct **biome** (or grouping of biomes) from the word bank with the National Park.

WORD BANK

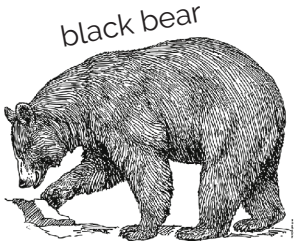
river & temperate forest	desert, river & forest
desert, river & grassland	termperate forest & taiga
taiga & forest	tundra, forest & taiga

YOSEMITE - CALIFORNIA

biome: _____


pika


mule deer


black bear


redwood


lupine


white-=belted ringtail dragonfly

GRAND CANYON - ARIZONA

biome: _____

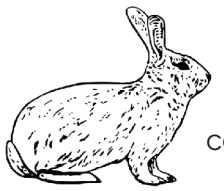

big sagebrush


bighorn sheep


blue grama grass

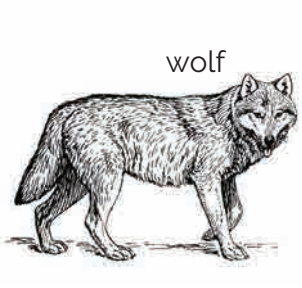
short horned lizard

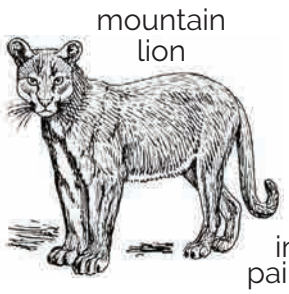

tiger salamander

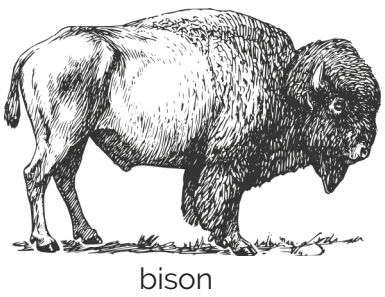

cottontail rabbit

YELLOWSTONE - WYOMING

biome: _____

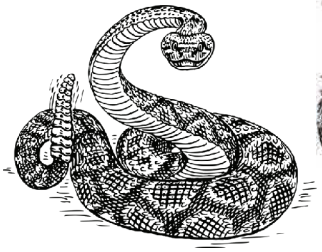


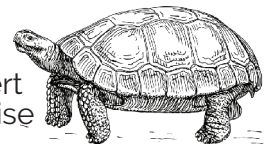




ZION - UTAH

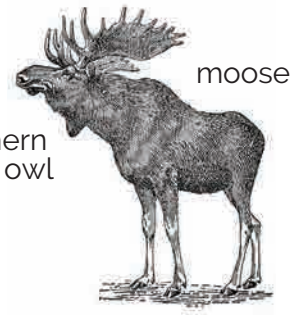
biome: _____

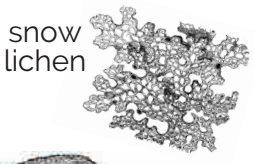


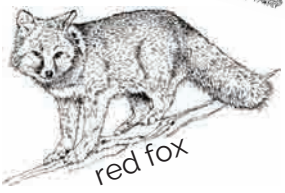


DENALI - ALASKA

biome: _____

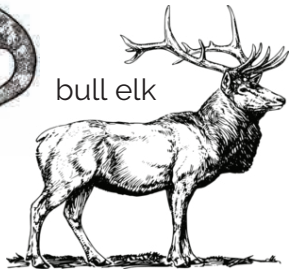


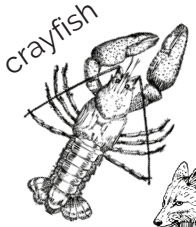


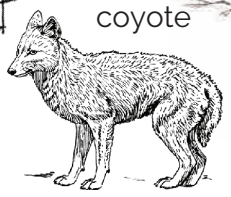


GREAT SMOKY MOUNTAINS - TENNESSEE & NORTH CAROLINA

biome: _____







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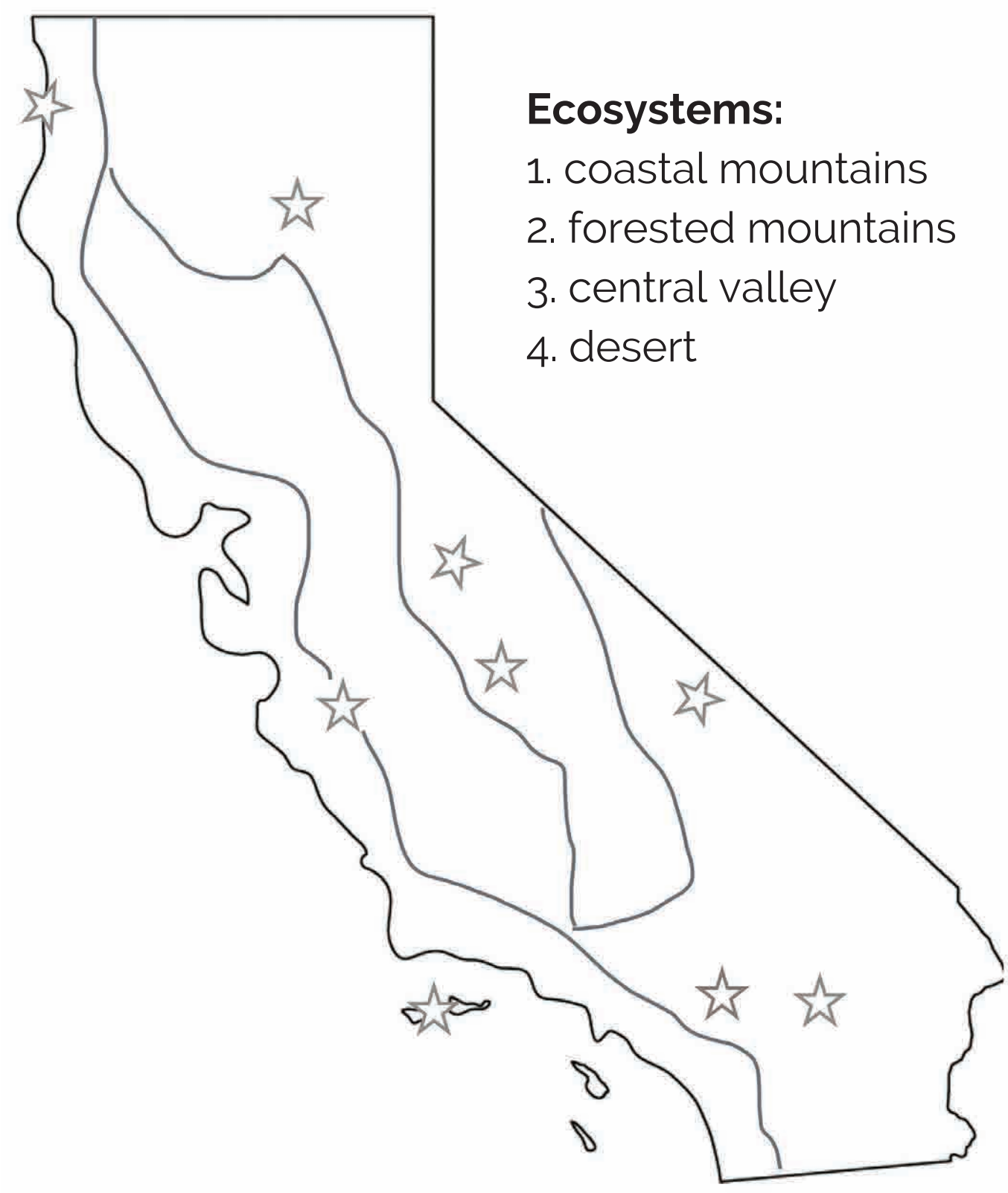
MAPPING CALIFORNIA



Ecosystems:

1. coastal mountains
2. forested mountains
3. central valley
4. desert

name:

CA NATIVE SPECIES

COLORING PAGE

CALIFORNIA POPPY

CALIFORNIA REDWOOD

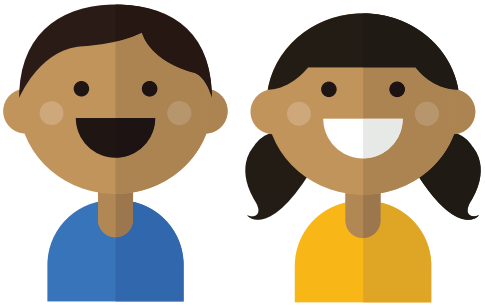
Some of the tallest trees in the world!

CALIFORNIA GRIZZLY BEAR

Sadly, the California Grizzly Bear is now Extinct

name:

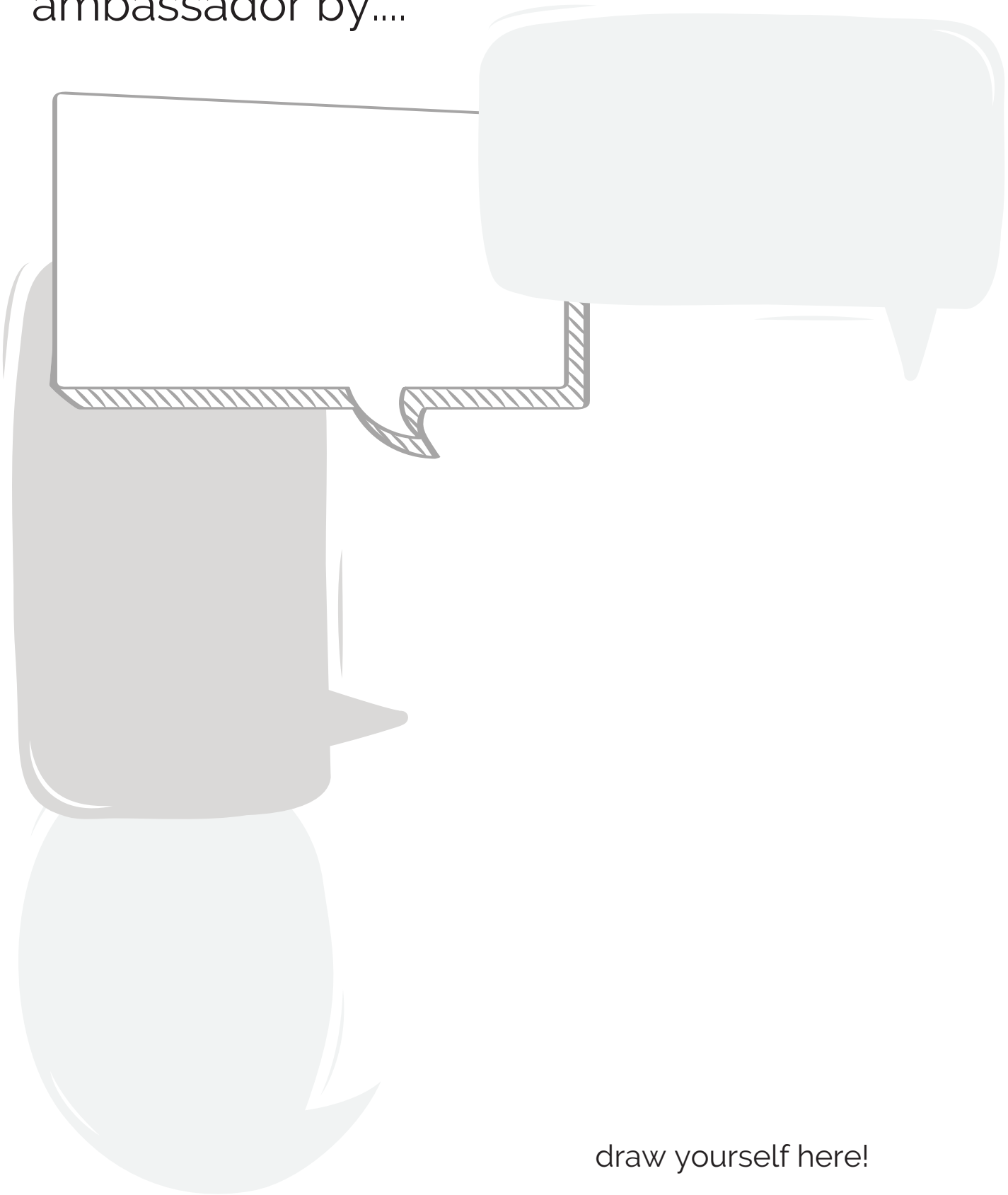
ENVIRONMENTAL AMBASSADORS



What is an Ambassador?

Who are some ambassadors you know?

I will be an environmental ambassador by....



draw yourself here!

Environmental Science

WORKBOOK

NAME: ANSWER KEY

name:

ANSWER KEYS

Environment:

the area in which animals and plants live.

Biodiversity:

a variety of plants and animals in a given place

Why is **Biodiversity** important in an **Environment**?

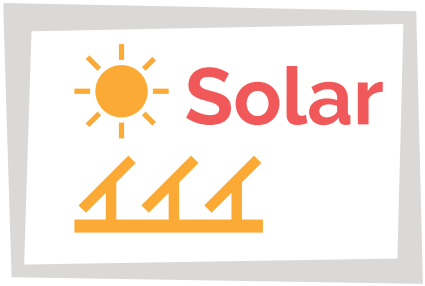
if one plant or animal is hurt or decreases in population the other creatures can still survive. It creates a balance in an ecosystem.

Draw a **Biodiverse Environment**:

RESOURCES:

a material that is useful to humans

Draw a **Renewable** Resource example:



Draw a **Non-Renewable** Resource example:

Sustainability:

using resources in a way that will allow resources to last longer.

How can we live **sustainably**?

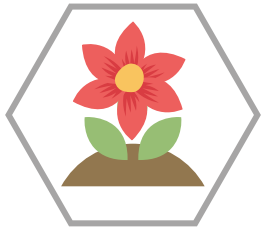
- use less water
- recycle
- donate clothing instead of throwing it out

POLLUTION:

waste that is damaging to the environment it is in

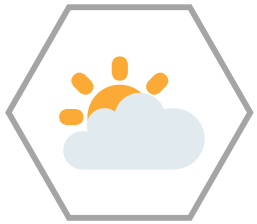
3 Types of Pollution:

What can we do to prevent each type of **Pollution**?



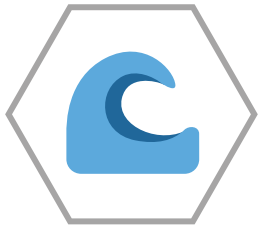
Land:

Pick up litter



Air:

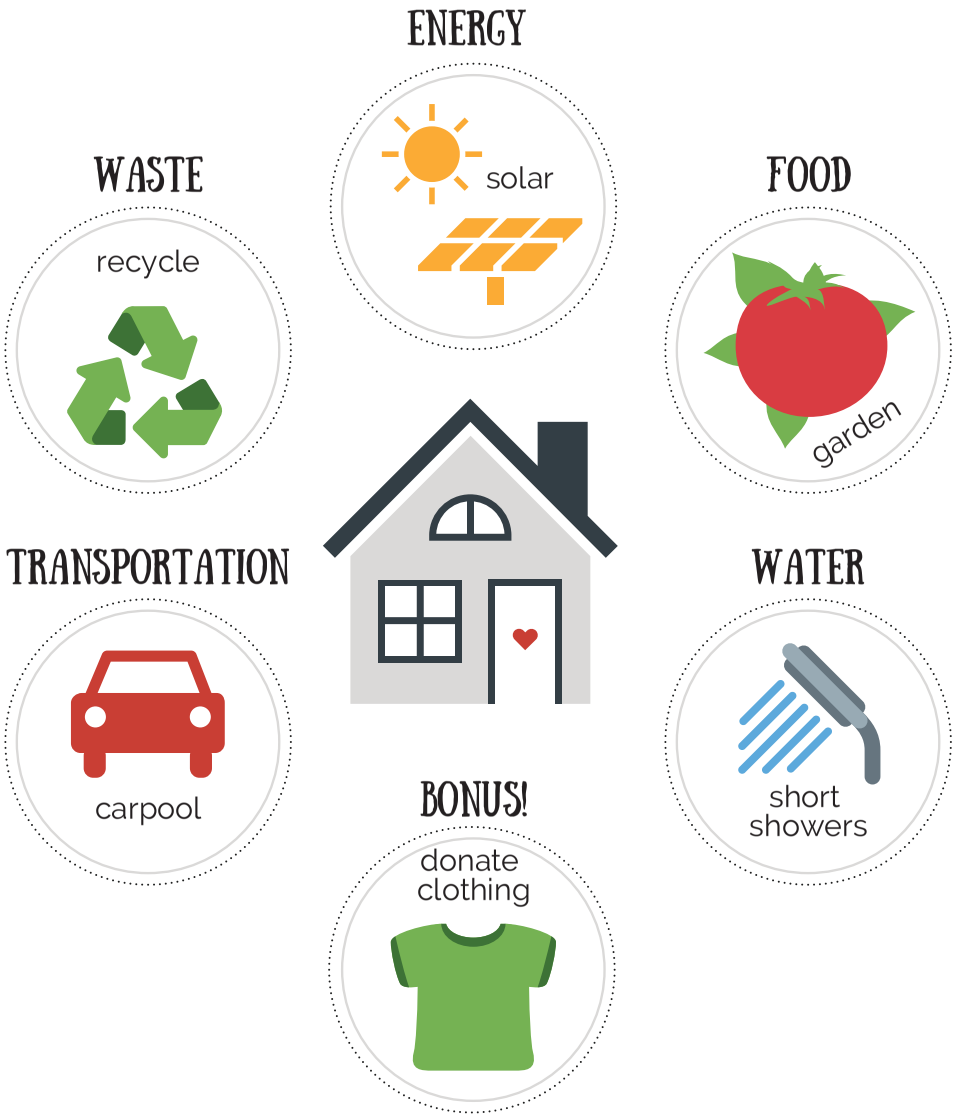
Use more fuel efficient vehicle



Water:

throw less waste out, especially plastics.

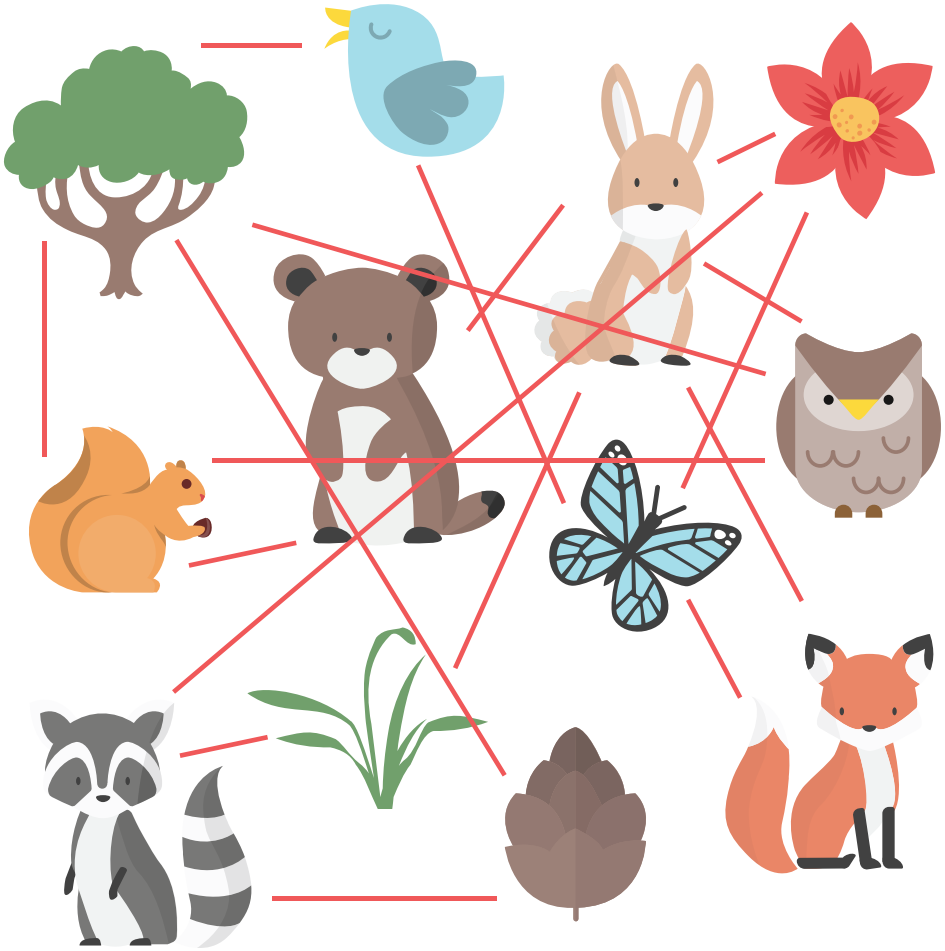
Think about some ways that you can change your lifestyle to be more **environmentally aware**.



name:

ANIMAL COMMUNITIES

Draw a line to any plant or animal that you think interacts with one another.



name:

HUMAN COMMUNITY

Define the words below. Think about how we can solve these problems in our community.

Homeless:

a person who has no home or permanent place to live.

Shelter:

Something that provides cover or protection

Poverty:

When a person does not have access to the necessities for living safely, healthily, and comfortably.

Food Security:

a person's or family's access to food

What can we do to help our Local Community?

Help out at a local Senior Center or Old Folks Home
Help our at a local Boys & Girls club
Help out a local hospital
Tutor a friend
Help out at a homeless center

Volunteer:

a person's who works to help other people

name:

WASTE MANAGEMENT

1. Reduce:

Create less waste by changing what you use/buy

Ex: Use a reusable water bottle.

2. Reuse:

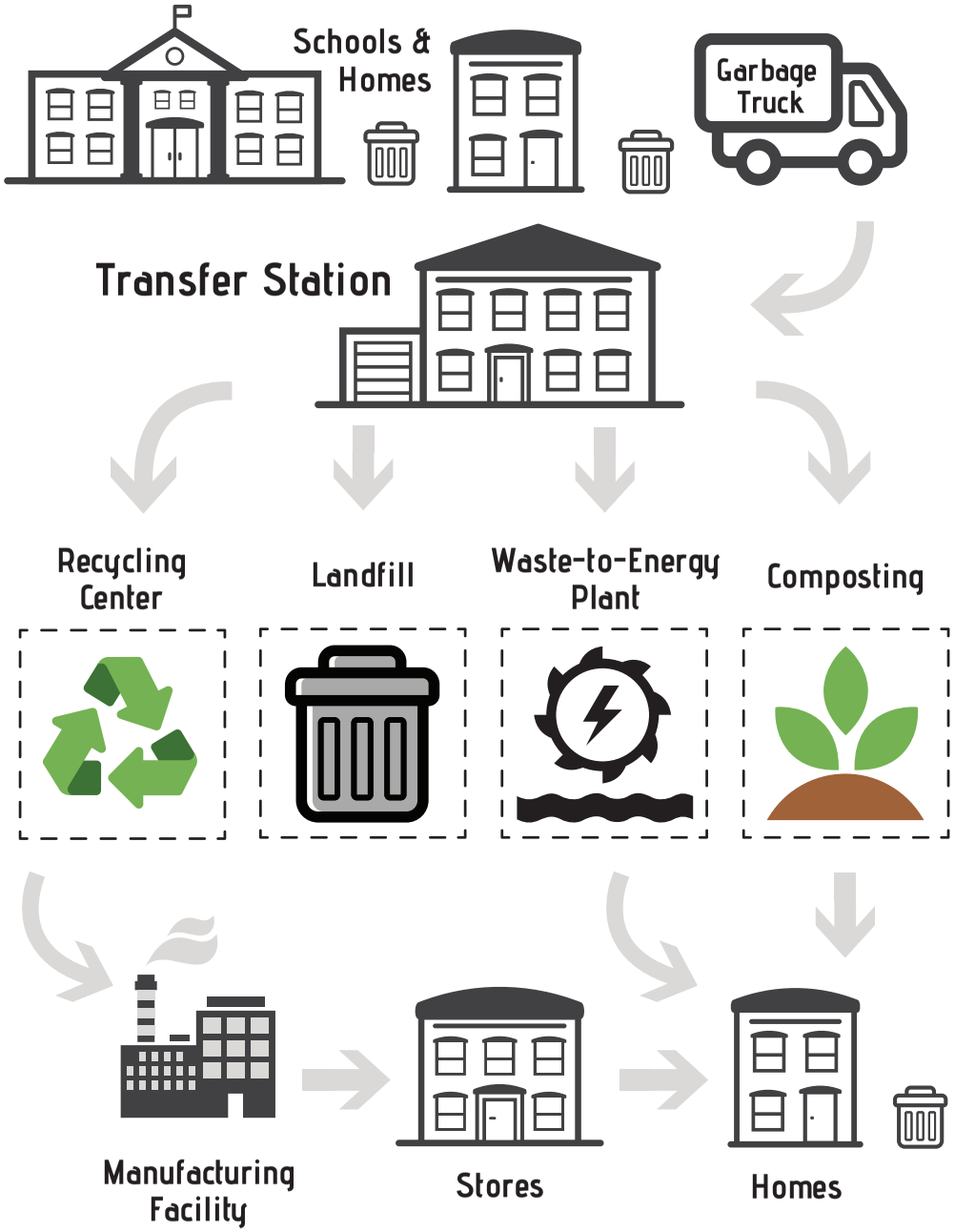
Create less waste by using the things you have for a longer time

Ex: Use a plastic water bottle for multiple uses.

3. Recycle:

Using old materials to create a new product.

Ex: Recycle plastic water bottles after you use them to make something new.



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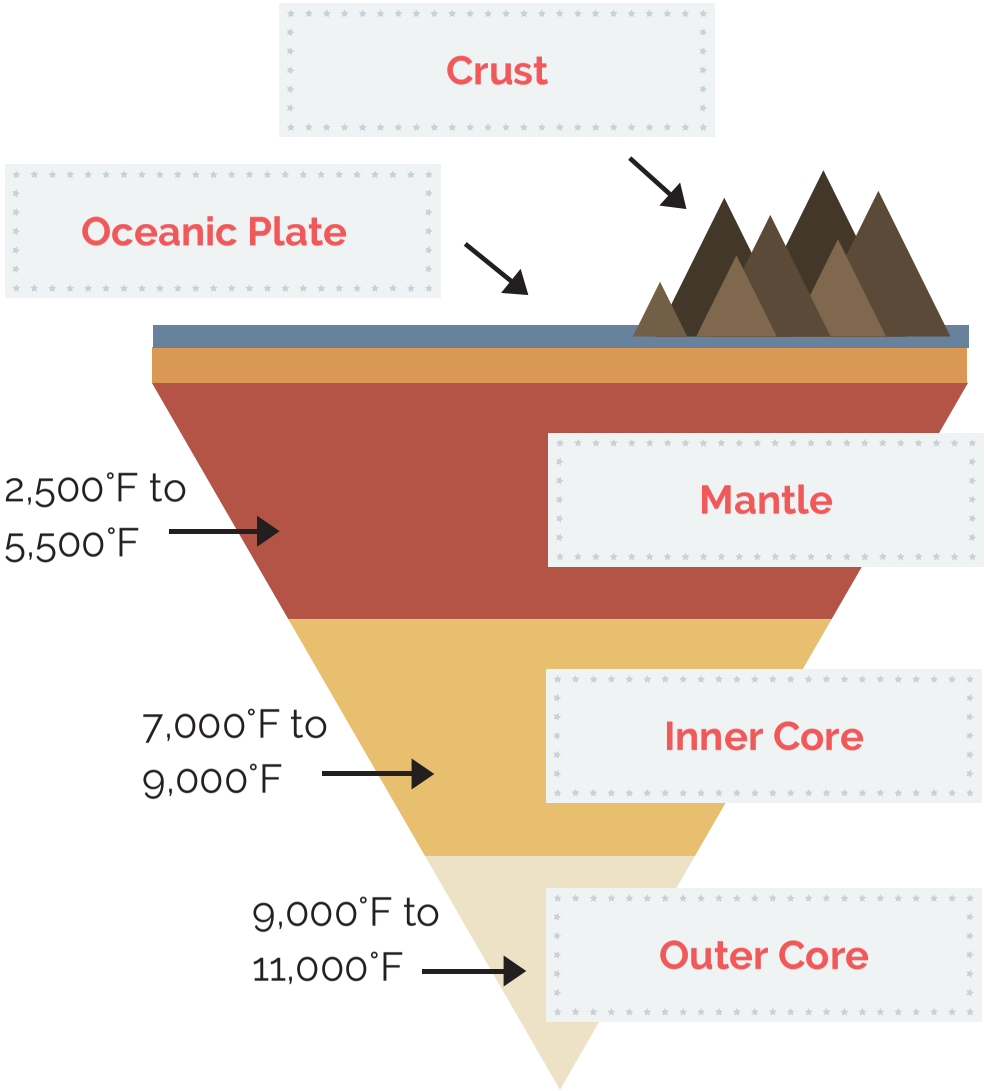
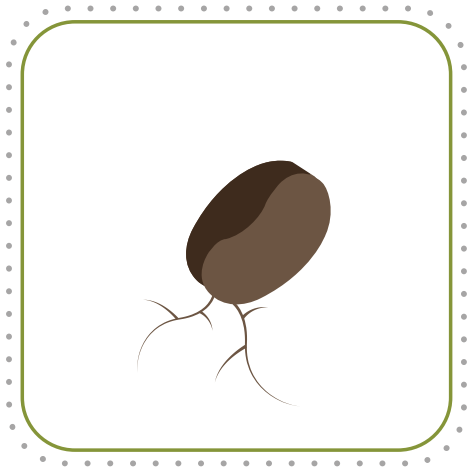
ANSWER KEY



name:

ANSWER KEY

Seed



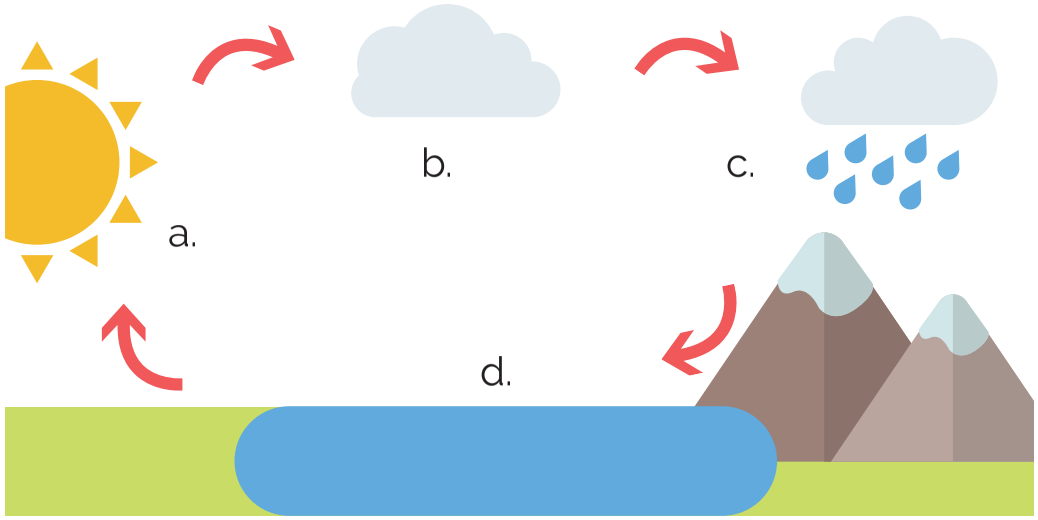
Seedling

Sprout

Flower

name:

ANSWER KEY



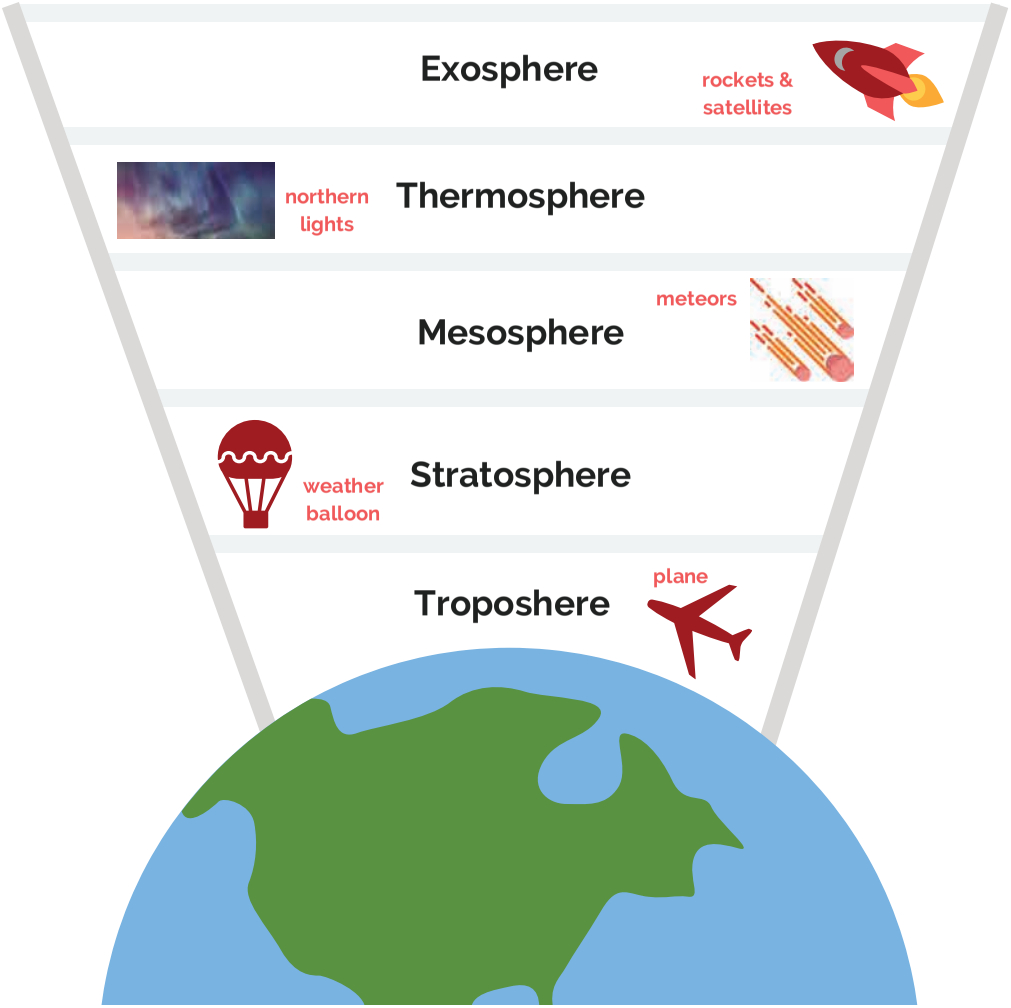
impacted by....

b.	Condensation	air pollution
c.	Precipitation	air pollution
d.	Collection	water pollution
a.	Evaporation	air pollution

name:

ANSWER KEY

Explain the differences between levels based on drawings



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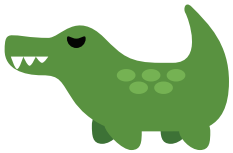
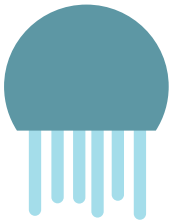
ANSWER KEY

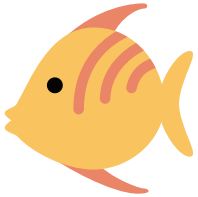


Reptiles

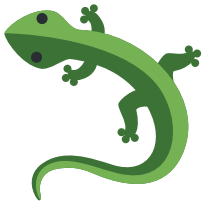


Cnidarians

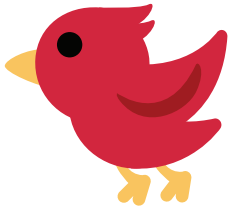
Mollusks



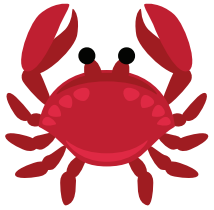
Fish



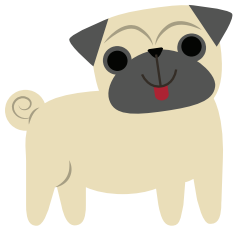
Amphibians



Birds



Arthropods



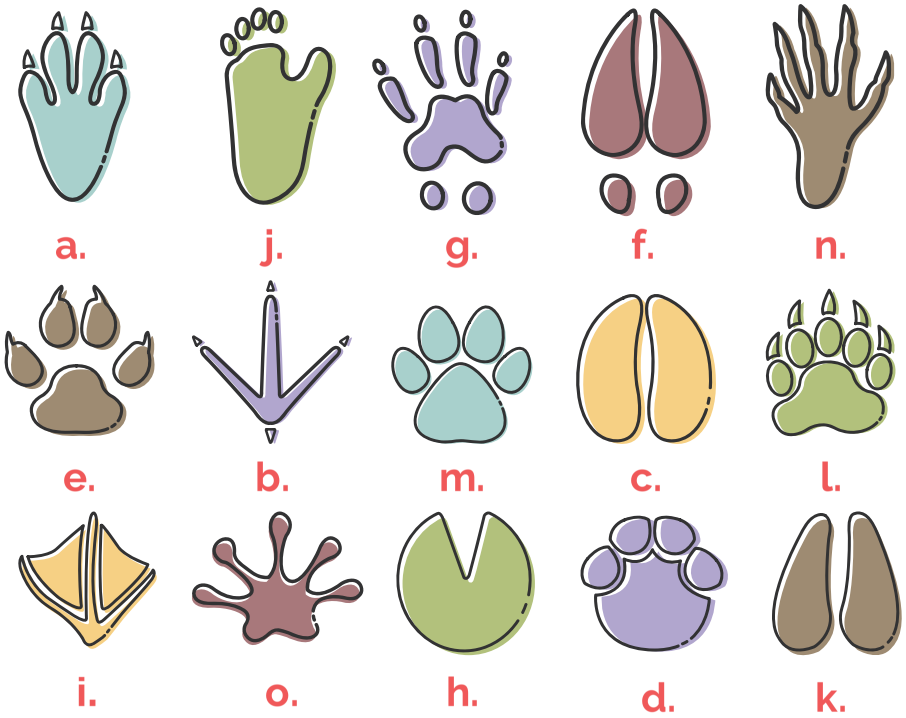
Mammals

What Animal Family do **Humans** belong to?

Mammals

name:

ANSWER KEY



ANSWER KEY

a. rabbit
b. bird
c. cow
d. elephant
e. lion
f. deer
g. squirrel
h. pig
i. duck
j. monkey
k. sheep
l. bear
m. dog
n. hamster
o. lizard

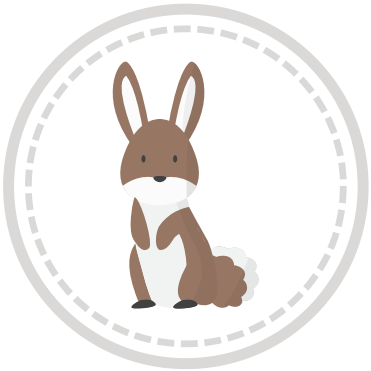
name:

ANSWER KEY

	offense:	defense:
	bat	tiger
	hawk	kameleon
	star-nose mole	octopus
	catfish	poison dart frogs
	bears	skunk

name:

ZOOS & AQUARIUMS



Animal:

Rabbit

Natural Habitat:

Forest

Pros

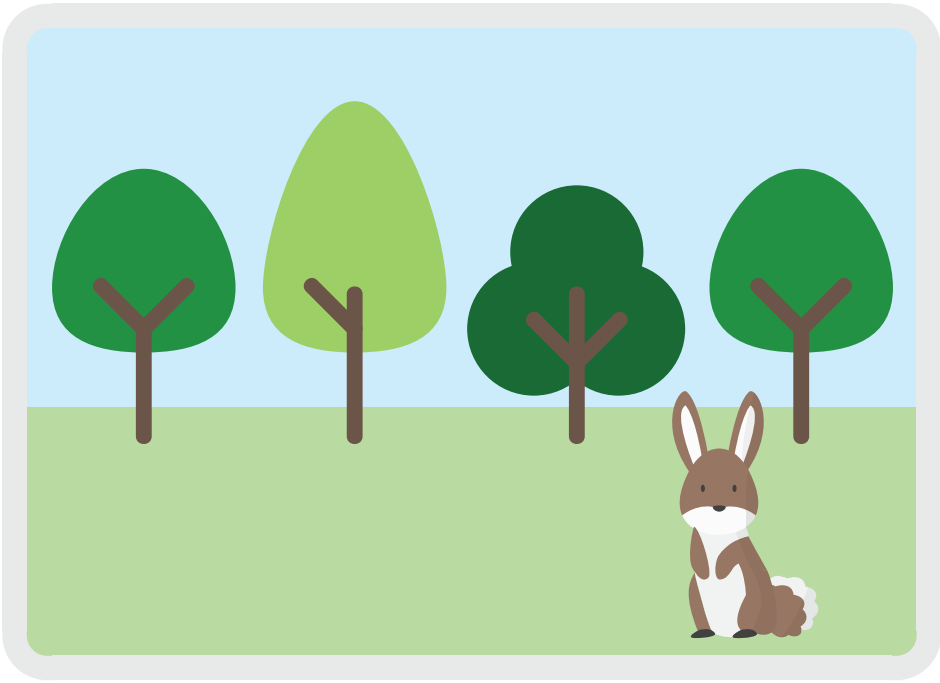
1. Education
2. Veterinary Care
3. Repopulating of Endangered Species
4. Economic source for a community
5. Safe Environment

Cons

1. Enclosures do not meet all needs
2. Changed animal behavior
3. Viewed as recreation
4. Ethics
5. Exposure to diseases

Design a considerate Zoo enclosure for your chosen animal below. Include all of the following in your design:

1. Food & Water **2. Space** **3. Community** **4. Entertainment**



name:

ENDANGERED ANIMALS

Review reasons for animals becoming endangered/extinct.

Habitat Loss

I llegal Wildlife Trade

Climate Change

Conflict between Human & Wildlife

Underwater Bycatch

Pollution

Species: Invading the Ecosytem

Endangered:

a species that is close to dying out

example:

Extinct:

a species that no longer exists

example:

How can we prevent the **Extinction** of animals?

H – **be careful about building new developments so as not to destroy animal's native lands.**

I – **animals should not be killed excessively, especially if it is illegal to do so.**

C – **try and prevent climate change by adjusting our lifestyles & regulations**

C – **do not take over food or water sources from animals.**

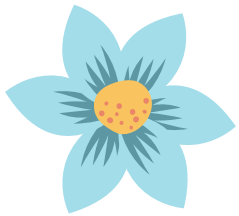
U – **Fish in a more sustainable way that doesn't hurt other species.**

P – **Stop polluting and change regulations**

S – **Do not introduce non-native plants or animals into an ecosystem**

name:

ANSWER KEY



Design a **Producer:**

- Energy from the Sun
- Method of Defense
- Stationary

Design a **Primary Consumer:**

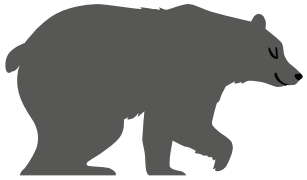
- Eats the Producer

Design a **Secondary Consumer:**

- Eats the Primary Consumer

Design a **Tertiary Consumer:**

- Eats the Secondary Consumer



Design an **Apex Predator:**

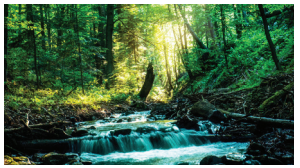
- No Natural Predators
- Top of the Food Chain

Desert

Grassland

Lake, River & Stream

Rainforest



Marine

Temperate Forest

Taiga

Tundra

organism

single living thing

duck

population

all of the same living thing in a single area

ducks

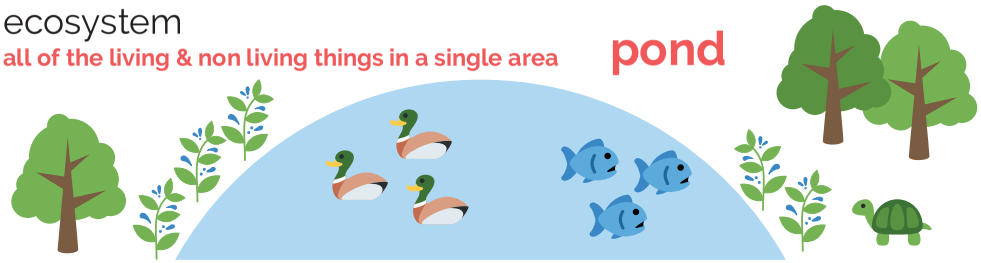
community

all of the living things in a single area

frogs reeds fish turtles ducks trees

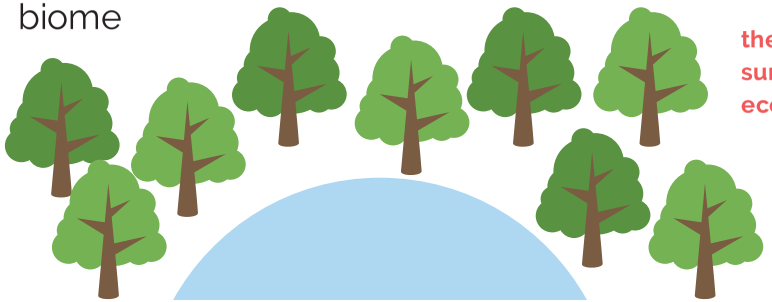
ecosystem

all of the living & non living things in a single area



pond

biome



the larger region surrounding a given ecosystem.

forest

name:

ANSWER KEY

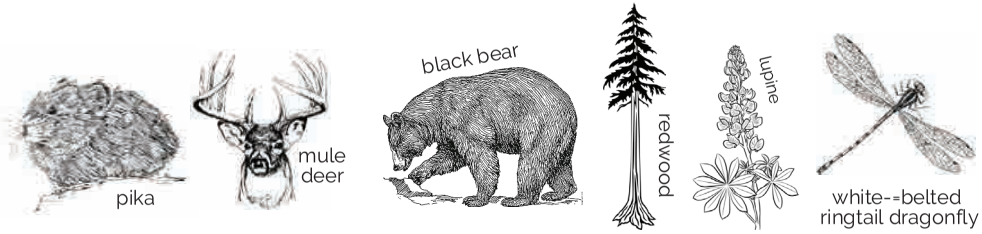
Examine each National Park and its **native species**. Match the correct **biome** (or grouping of biomes) from the word bank with the National Park.

WORD BANK

river & temperate forest	desert, river & forest
desert, river & grassland	temperate forest & taiga
taiga & coniferous forest	tundra, forest & taiga

YOSEMITE - CALIFORNIA

biome: **temperate forest & taiga**



GRAND CANYON - ARIZONA

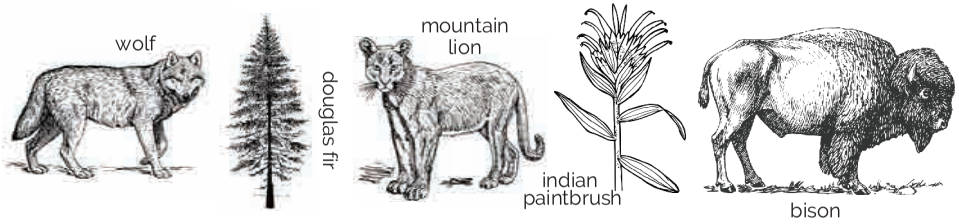
biome: **desert, river & grassland**

name:

ANSWER KEY

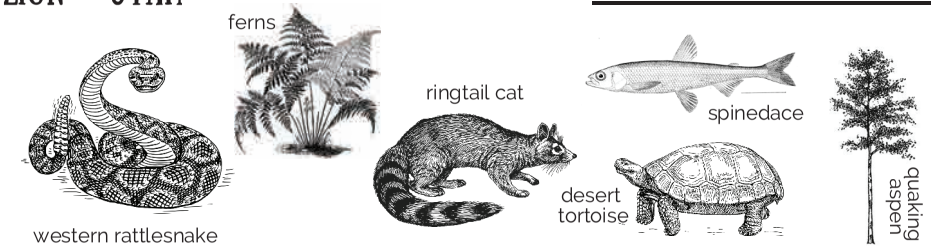
YELLOWSTONE - WYOMING

biome: **taiga & coniferous forest**



ZION - UTAH

biome: **desert, river & forest**

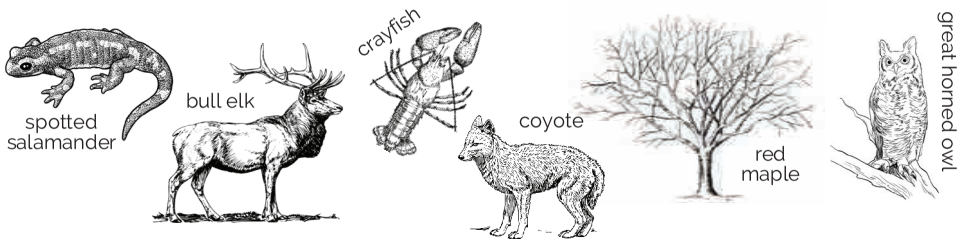


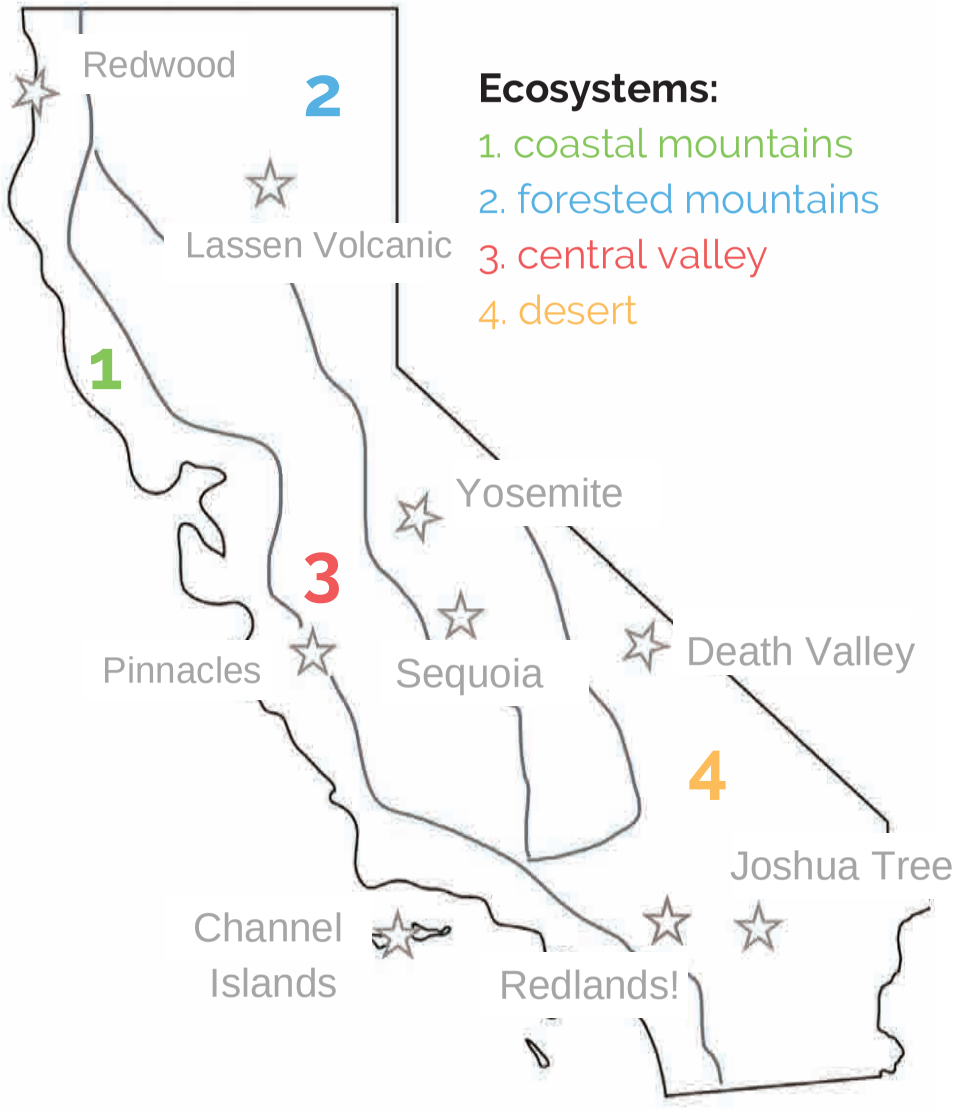
DENALI - ALASKA

biome: **tundra, forest & taiga**

GREAT SMOKY MOUNTAINS - TENNESSEE & NORTH CAROLINA

biome: **river & temperate forest**





name:

CA NATIVE SPECIES

COLORING PAGE

CALIFORNIA POPPY

CALIFORNIA REDWOOD

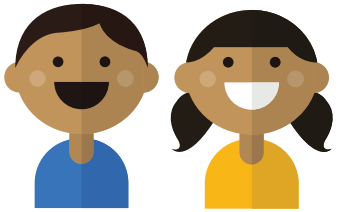
Some of the tallest trees in the world!

CALIFORNIA GRIZZLY BEAR

Sadly, the California Grizzly Bear is now Extinct

name:

ENVIRONMENTAL AMBASSADORS



What is an Ambassador?

Someone who works to create awareness for a certain cause.

Who are some ambassadors you know?

Martin Luther King Jr.

Malala Yousufzai

Jane Goodall

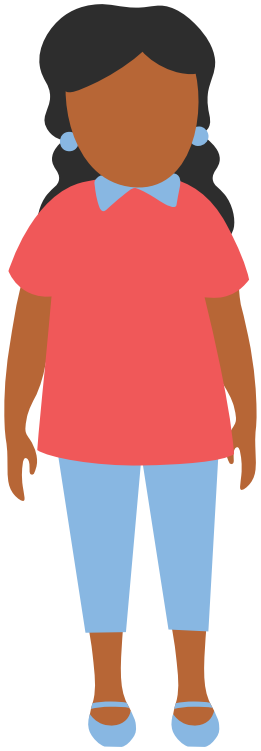
I will be an environmental ambassador by....

Talking to my parents & friends about the environment

Planting seeds in our garden

Recycling

Picking up trash



draw yourself here!

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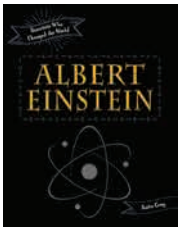
☐ 

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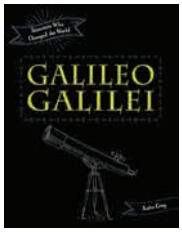
☐ 

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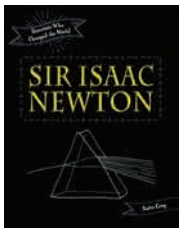
☐ 

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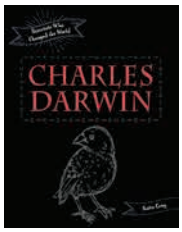
☐ 

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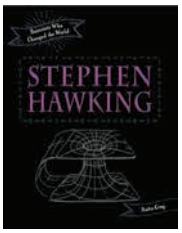
☐ 

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