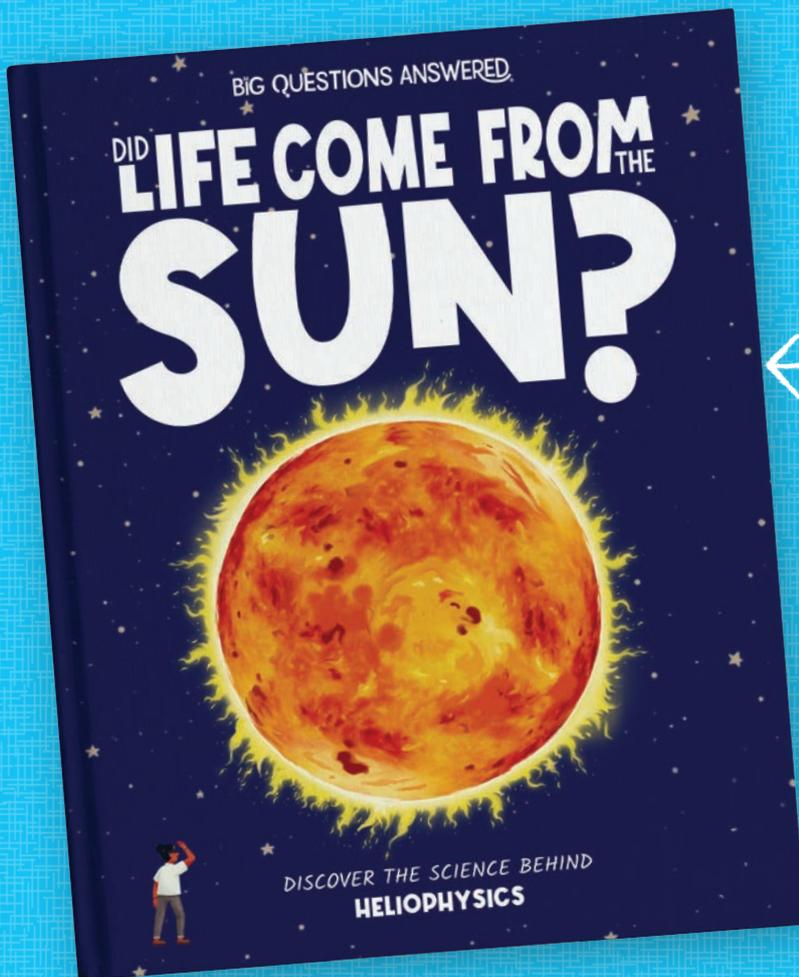


THE BIG QUESTIONS ANSWERED

YOUNG SOLAR PHYSICISTS'

# ACTIVITY PACK



*Full of fun and exciting activities!*



# CONTENTS:

<b>Fun Sun Words:</b> Word Search	3
<b>Discovering the Sun's Secrets:</b> True or False	4
<b>Solar Scramble:</b> Word Scramble & Words Within Words	5
<b>Odd Cell Out:</b> Odd One Out	6
<b>Lost in the Field:</b> Line Maze	7
<b>Solar-Powered Exploration:</b> Reflective Writing	8
<b>Curious Creatures:</b> Finish the Drawing	9
<b>Dinosaur Mix-Up:</b> Match Up	10
<b>Sneaky Sun:</b> Spot the Difference	11
<b>Super Sun Facts:</b> Fill in the Blanks	12
<b>Cosmic Journey:</b> Creative Writing	13
<b>Pick a Favorite Planet:</b> Fact File	14
<b>A Message from the Stars!:</b> Decoding Challenge	15
<b>Write Your Own Heliophysics Story:</b> Creative Writing	16
<b>More Fun Activities:</b> Coloring Sheets and More!	17
<b>Activity Answers</b>	24

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Picture Credits:  
(t = top, b = bottom, m = middle, l = left, r = right)

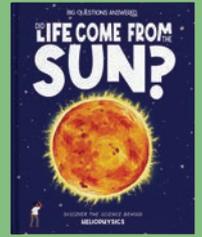
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# DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "The Sun and Ancient Communities: Scene 1".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## FUN SUN WORDS

Scientists use all sorts of evidence to learn about the Sun! Can you find and circle the words listed below, in the grid? Words can be found in any direction (including diagonals) and can overlap each other.

S	A	T	M	O	S	P	H	E	R	E	C	R	A	F
P	O	F	A	L	I	U	S	D	X	H	G	L	P	T
D	R	L	O	U	C	I	M	E	P	H	D	U	P	U
L	L	M	A	J	K	L	O	A	X	F	R	O	L	K
S	I	A	W	R	S	T	A	R	Y	U	L	O	A	T
F	O	G	S	M	S	L	O	T	P	P	E	S	N	T
M	U	I	H	N	T	Y	W	H	E	A	T	W	E	J
X	O	A	Q	T	V	S	S	B	O	B	S	A	T	M
H	E	E	N	O	X	Y	V	T	N	I	C	O	S	V
H	R	C	M	S	A	R	K	F	E	F	E	L	A	O
X	N	A	E	R	L	Y	O	L	I	M	D	E	L	R
E	R	P	Y	V	K	X	C	E	G	R	S	L	L	E
K	R	S	U	N	R	O	M	M	R	R	G	K	Y	E
T	O	M	K	S	P	T	N	O	X	Y	G	E	N	R

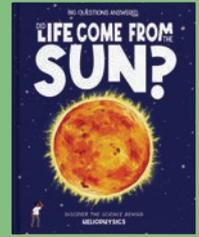
<b>ATMOSPHERE</b>	<b>SPACE</b>	<b>STAR</b>
<b>EARTH</b>	<b>PLANETS</b>	<b>SUN</b>
<b>HEAT</b>	<b>SOLAR SYSTEMS</b>	
<b>LIGHT</b>	<b>OXYGEN</b>	



# DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "Early Earth: Scene 2".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## DISCOVERING THE SUN'S SECRETS

Can you use what you've learned about the Sun to work out which of the sentences are true and which are false?

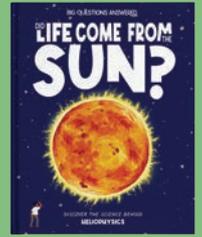
	SENTENCE	TRUE	FALSE
1	Volcanoes used to fill Earth's atmosphere with toxic gases.		
2	The scientists who study the Sun are called astronauts.		
3	Solar power is a type of renewable energy.		
4	Plants can turn sunlight into oxygen.		
5	Trees, plants, and animals have always lived on Earth.		
6	The Sun is a star that helps plants grow.		



## DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "The Power of the Sun: Scene 3".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



# SOLAR SCRAMBLE

Oh no! A solar storm has swept in and mixed up a bunch of words! Test your word-solving skills by trying to unscramble the words. They are all related to the Sun, its light, and ways of studying it. There is a list of the correct words at the bottom to help you.

OHWASSD

DAHSE

RTAS

INSTUHIL

OETSEELCP

EHAT

ILSTTAELE

HEAT

SATELLITE

SHADE

SHADOWS

STAR

SUNLIGHT

TELESCOPE

---

## EXTRA ACTIVITY - WORD WITHIN WORDS

How many words can you find within the word "heliophysics"?

1. You can only use the letters within the word "heliophysics".
2. Each of these letters can only be used once: E, L, O, P, Y, C.
3. "Heliophysics" has two letter H's, it has two letter I's and two letter S's so you can use them twice each.
4. You can't use any other letters from the alphabet.

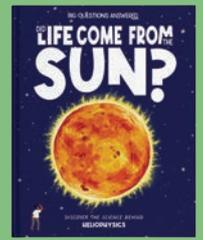
EXAMPLE: you can make the word HOPE using the letters in HELIOPHYSICS.

**HELIOPHYSICS**

# DID LIFE COME FROM THE SUN?

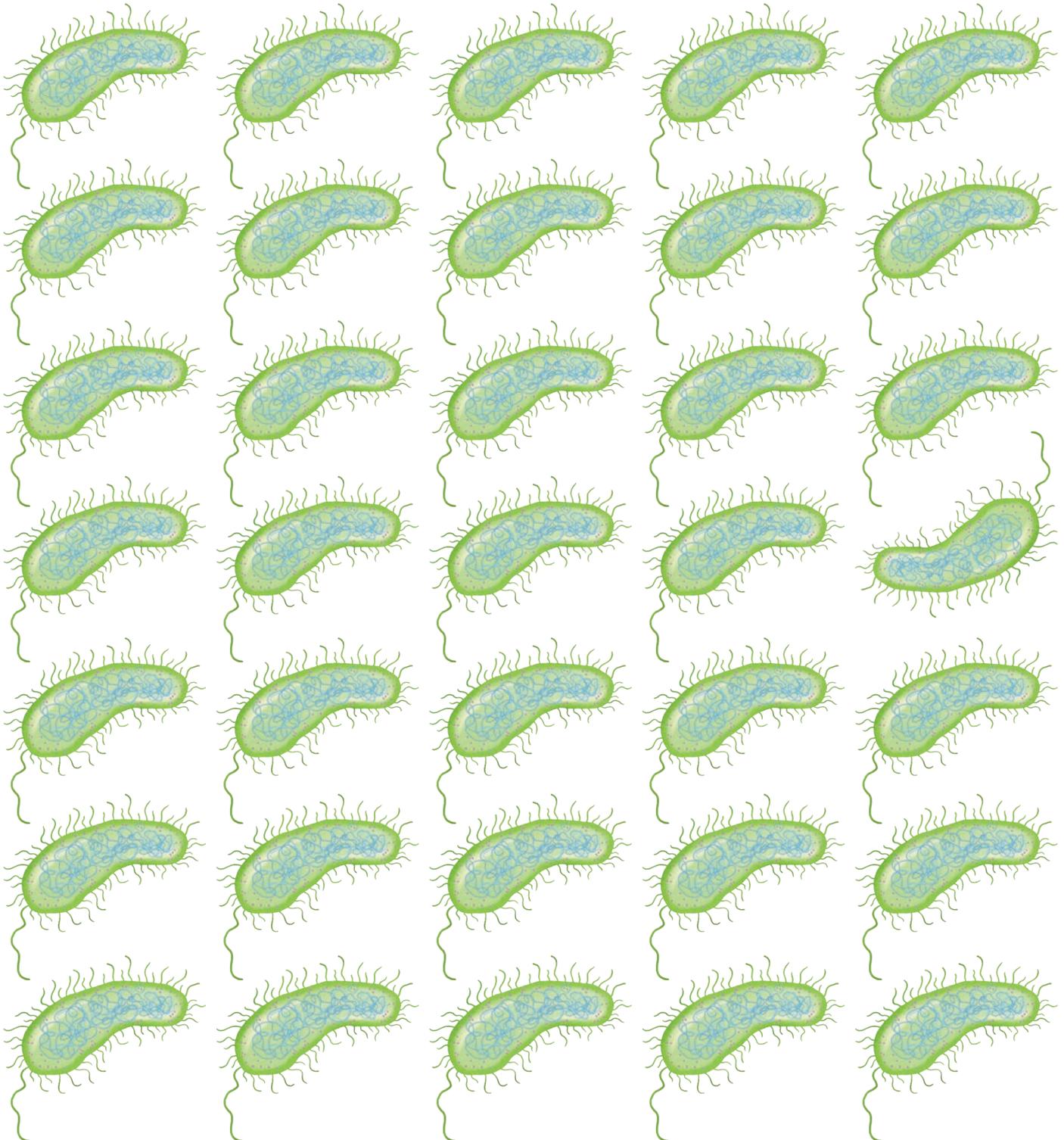
For reference to the Teachers' & Parents' Resources, this goes with "First Cells of Life: Scene 4".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## ODD CELL OUT

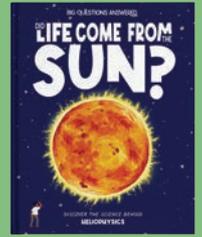
Look at all these cells that are soaking up energy from the Sun! Can you spot the one that stands out from the rest?



## DID LIFE COME FROM THE SUN?

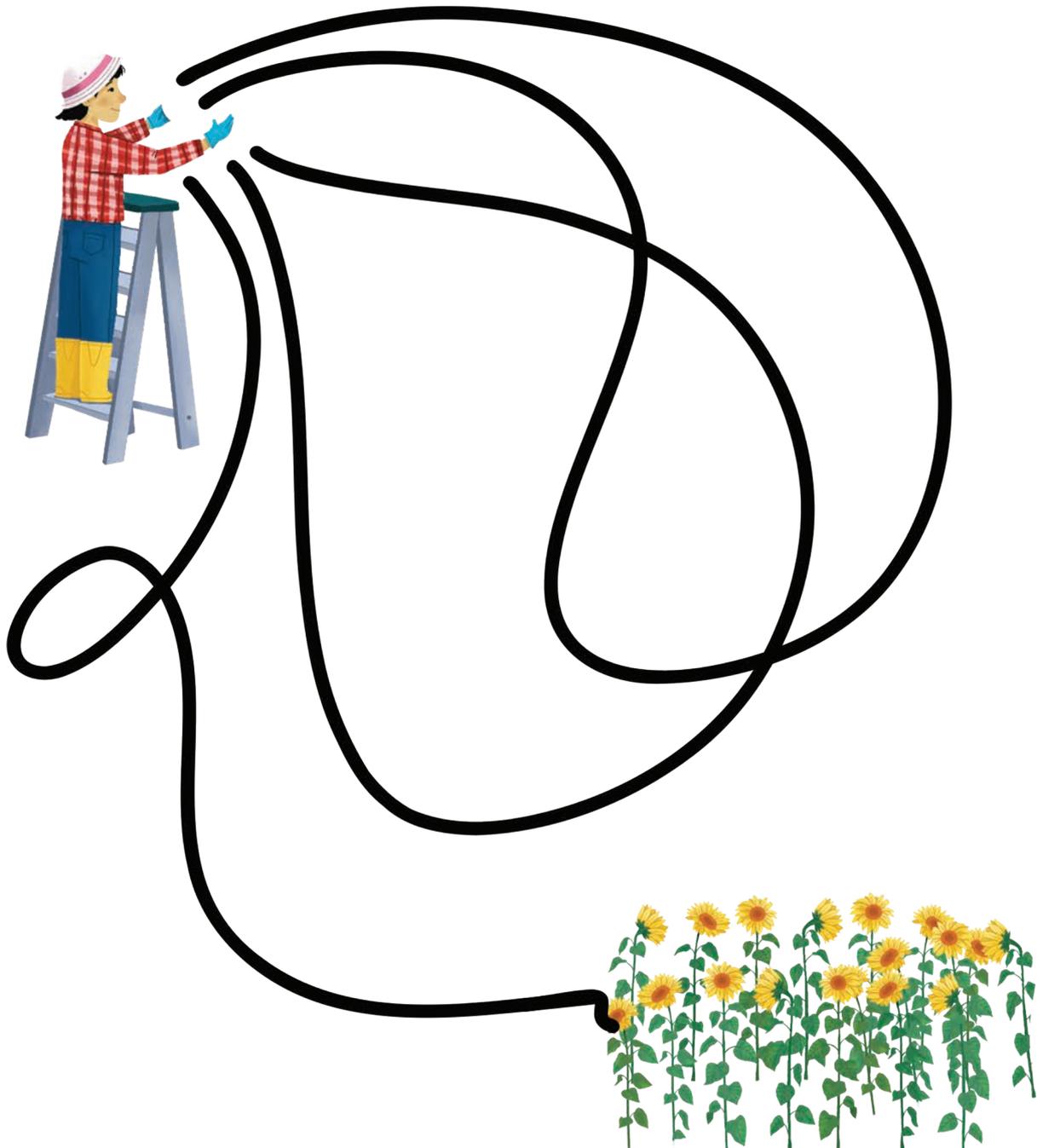
For reference to the Teachers' & Parents' Resources, this goes with "Photosynthesis: Scene 5".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



# LOST IN THE FIELD

This gardener needs to tend to their sunflowers. Can you help them take the right path to get to their garden?

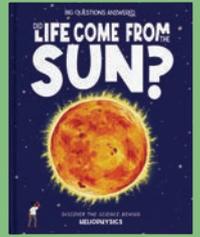




# DID LIFE COME FROM THE SUN?

*For reference to the Teachers' & Parents' Resources, this goes with "The Great Oxidation Event: Scene 6".*

*www.thebigquestionsanswered.com*



## SOLAR-POWERED EXPLORATION

Read the questions below and think about your own opinions before filling in your answers.

**What do you find most interesting about the Sun?**

.....  
.....  
.....

**Would you like to discover new types of stars? Why or why not?**

.....  
.....  
.....

**If you were a solar physicist, what would you most enjoy – designing spacecraft to explore the Sun, or using special telescopes to find out more about it?**

.....  
.....  
.....

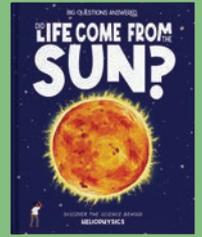
**What would be your big question about the Sun?**

.....  
.....  
.....

## DID LIFE COME FROM THE SUN?

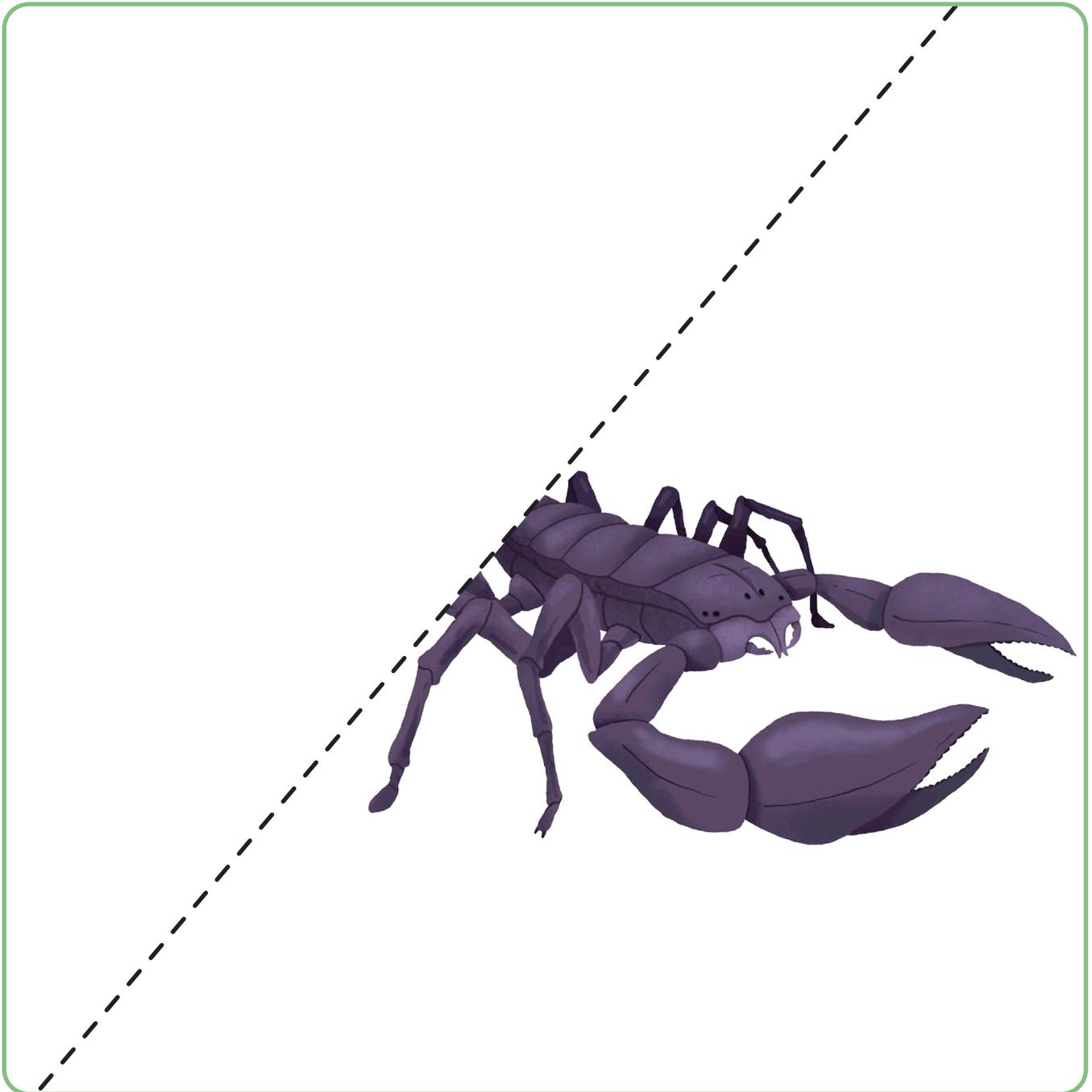
For reference to the Teachers' & Parents' Resources, this goes with "Giant Insects: Scene 7".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## CURIOUS CREATURES

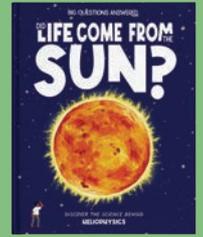
Lots of unusual-looking giant insects lived on Earth millions of years ago. Below is an illustration of a giant scorpion – get creative and complete the drawing of this creature as it wanders in search of food! Finish the picture by coloring it in!



# DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "Explosion of Life: Scene 8".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## DINOSAUR MIX-UP

Scientists have discovered hundreds and hundreds of different species of dinosaurs. Can you match up the description of the dinosaur with its name and photograph? Draw a line to match them up.

**Fact:**

My jaws contain 60 razor-sharp teeth and I had a bite three times stronger than a lion's.



**Fact:**

I had bony plates running along my back, which I used to scare off predators.



**Fact:**

I am one of the largest dinosaurs to ever exist! Because of my size, I had to eat a lot of plants.



**Fact:**

I had feathers and wings like a bird, but scientists don't know if I could fly properly.



I am...  
**A STEGOSAURUS**



I am...  
**AN ARGENTINOSAURUS**



I am...  
**A T-REX**

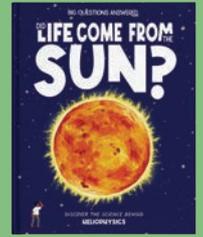


I am...  
**AN ARCHAEOPTERYX**

# DID LIFE COME FROM THE SUN?

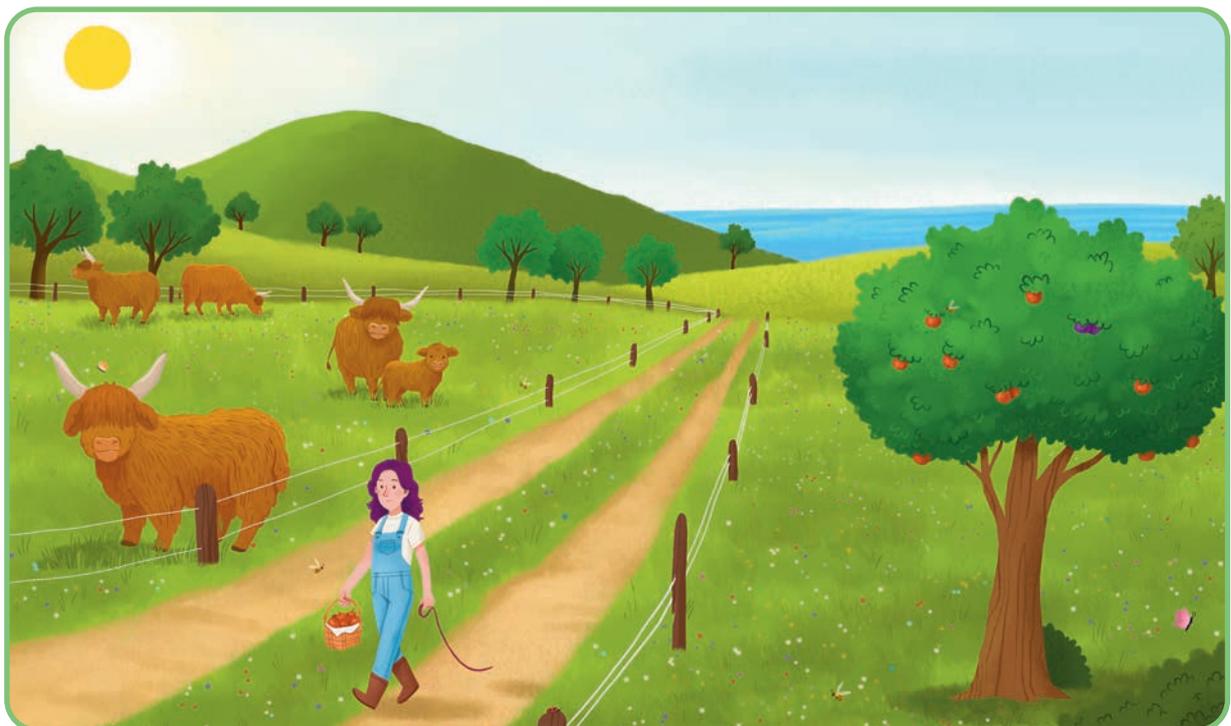
For reference to the Teachers' & Parents' Resources, this goes with "The Sun's Influence: Scene 9".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## SNEAKY SUN

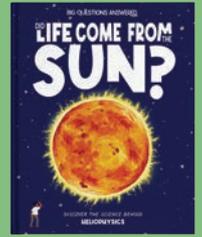
The sneaky Sun can play tricks on you! Can you spot the 8 differences between the two scenes? Circle them when you spot them.



## DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "The Human Connection: Scene 10".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



# SUPER SUN FACTS

Can you use the words below to fill in the blanks and uncover some amazing facts about the Sun? Each answer can only be used once.

core

solar eclipse

telescopes

billion

Jupiter

1. The Sun was formed 4.6 \_\_\_\_\_ years ago. It was created from a huge, spinning cloud of dust that collapsed under the weight of its own gravity.
2. The Sun is the biggest object in our solar system. It is ten times wider than \_\_\_\_\_, the largest planet.
3. When the Moon passes between Earth and the Sun, this is called a \_\_\_\_\_. If all three line up perfectly, the Moon blocks sunlight from reaching Earth and causes it to go completely dark for a few minutes!
4. Scientists can use \_\_\_\_\_ to study the Sun. These have to have special filters in them, because looking directly at the Sun without any protection can damage your eyesight!
5. The \_\_\_\_\_ of the Sun is its hottest part. Temperatures can reach up to 27 million °F (15 million °C).



What's your favorite fact about the Sun?

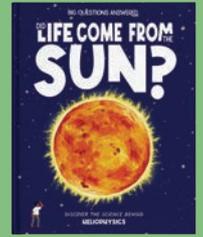




# DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "Life Beyond Earth: Scene 12".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## PICK A FAVORITE PLANET

Choose a planet from our solar system and see what amazing things you can find out about it! Draw it, color it in, and fill in the facts below.



*Draw your planet in here!*

This planet is called .....

How big is this planet? .....

How far away from the Sun is it? .....

How long does it take to orbit the Sun? .....

Cool facts about this planet:

1. ....

2. ....

3. ....

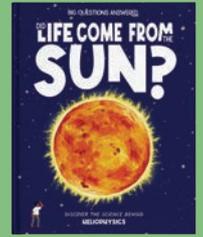
Why not print this sheet off multiple times to create a solar system booklet full of different planets!



# DID LIFE COME FROM THE SUN?

For reference to the Teachers' & Parents' Resources, this goes with "Our Sun: Scene 13".

[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## A MESSAGE FROM THE STARS!

You are exploring an observatory when you find a message left behind by a solar physicist from a long, long time ago! Can you use the code below to work out what the message says?

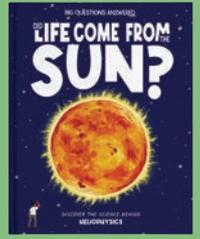
A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z




## DID LIFE COME FROM THE SUN?

*For reference to the Teachers' & Parents' Resources, this goes with "Post-Reading Questions".*

*www.thebigquestionsanswered.com*



# WRITE YOUR OWN HELIOPHYSICS STORY

Can you write a story of your own about heliophysics, making sure to include the 3 key phrases and words below?

solar physicist

Sun

outer space

A large, light-orange, irregularly shaped area with a white border, containing 15 horizontal lines for writing a story.

# **MORE FUN HELIOPHYSICS ACTIVITIES**

## **COLORING SHEETS & MORE!**

The following activities aren't based on any specific scenes in the book. They can be used on their own or alongside the book as extra fun.



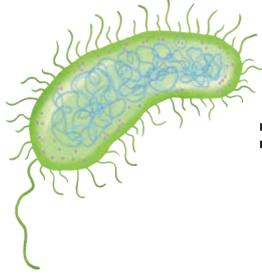
# SIMPLE SUMS

Below are 3 objects which represent different numbers.

Work out the sum based on what each object represents and write your answers in the boxes.



= 3



= 2



= 5



+



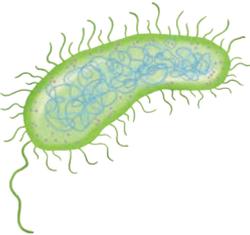
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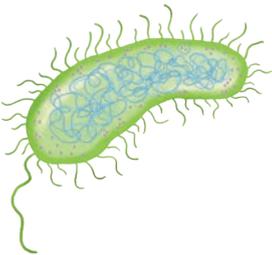
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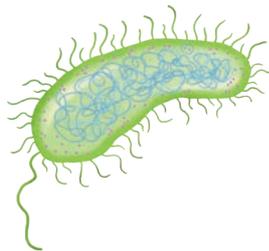
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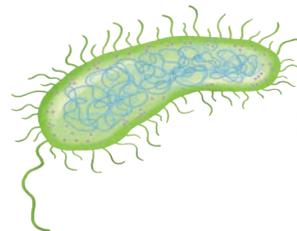
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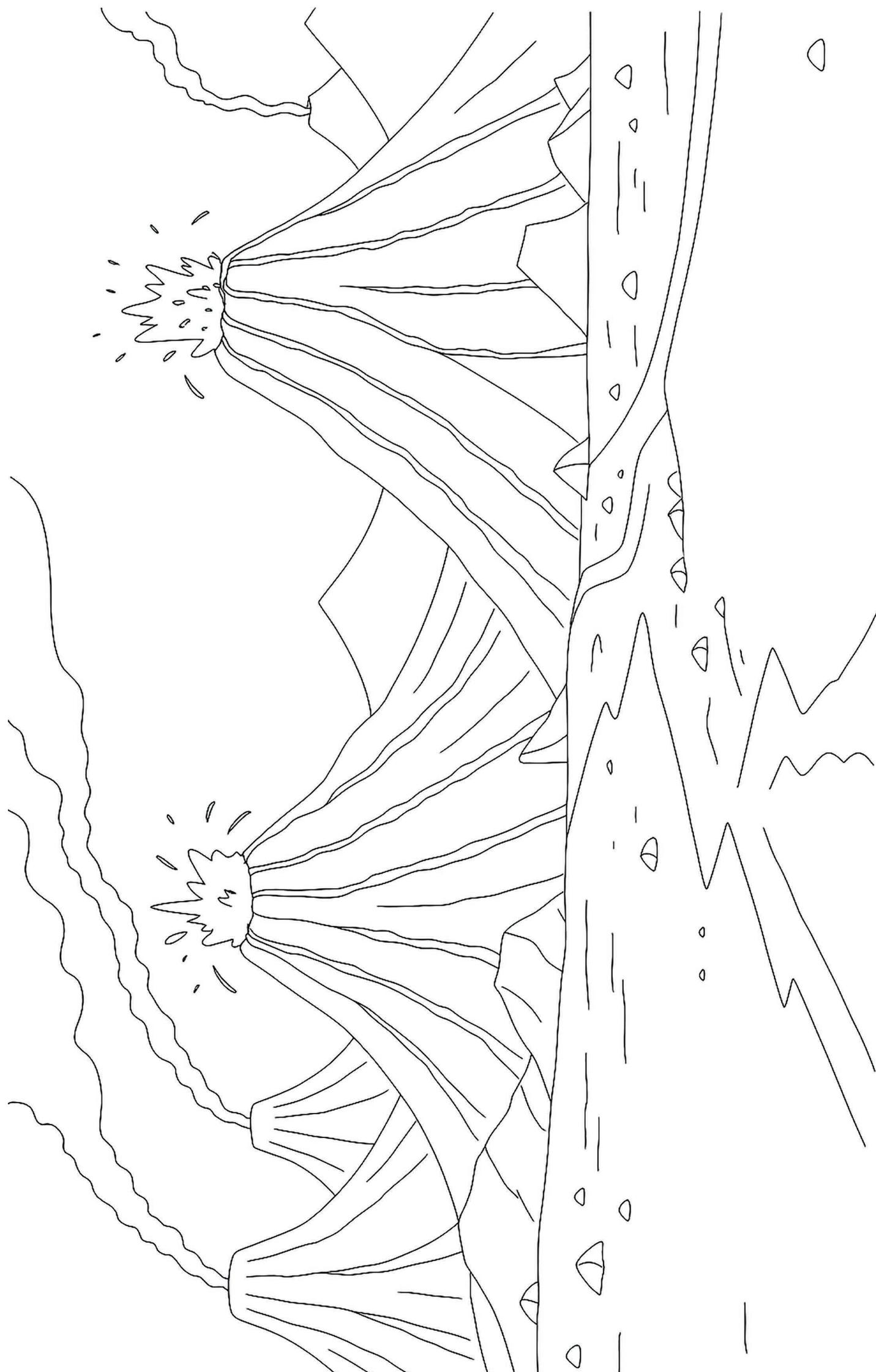
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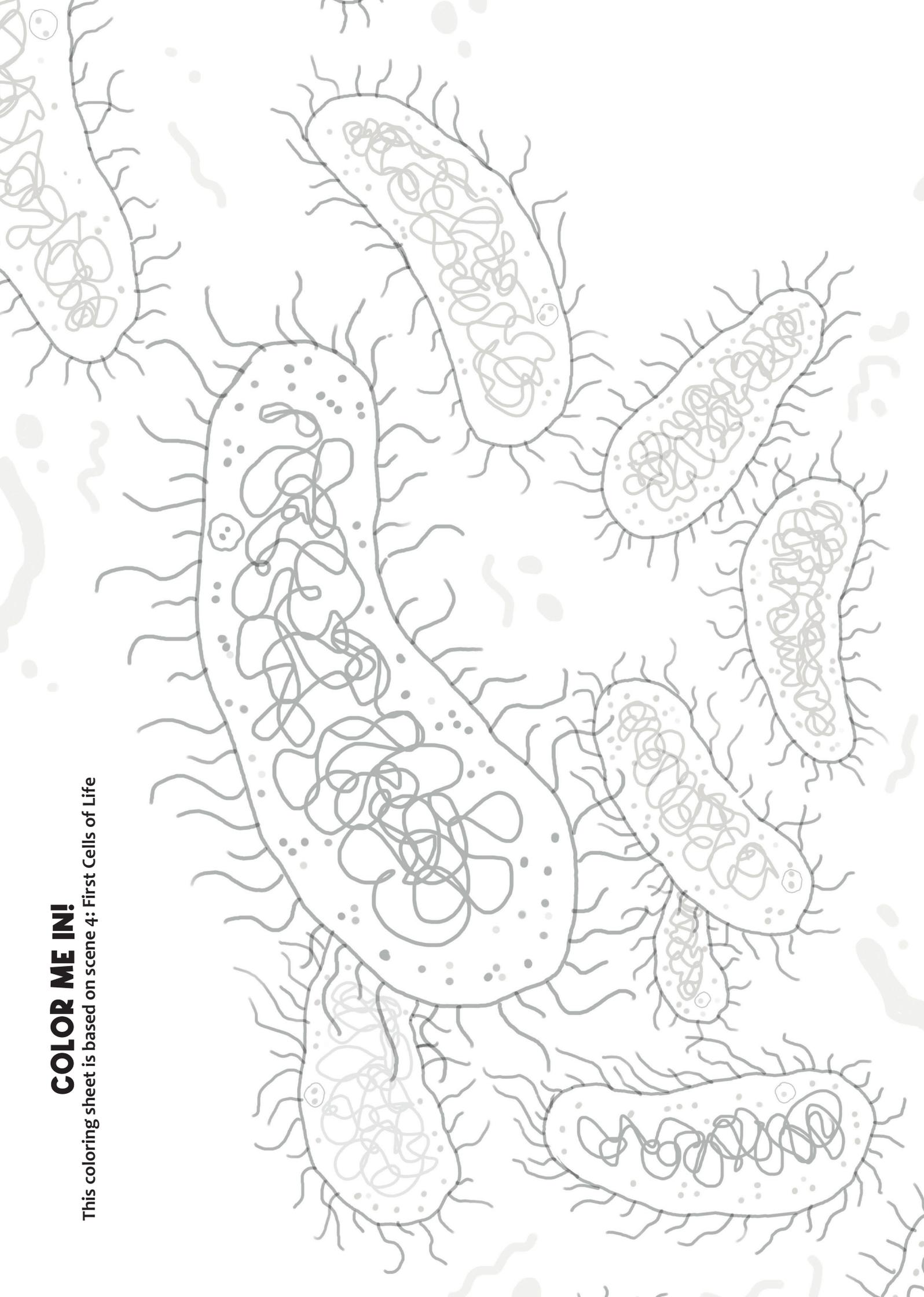
# COLOR ME IN!

This coloring sheet is based on scene 2: Early Earth



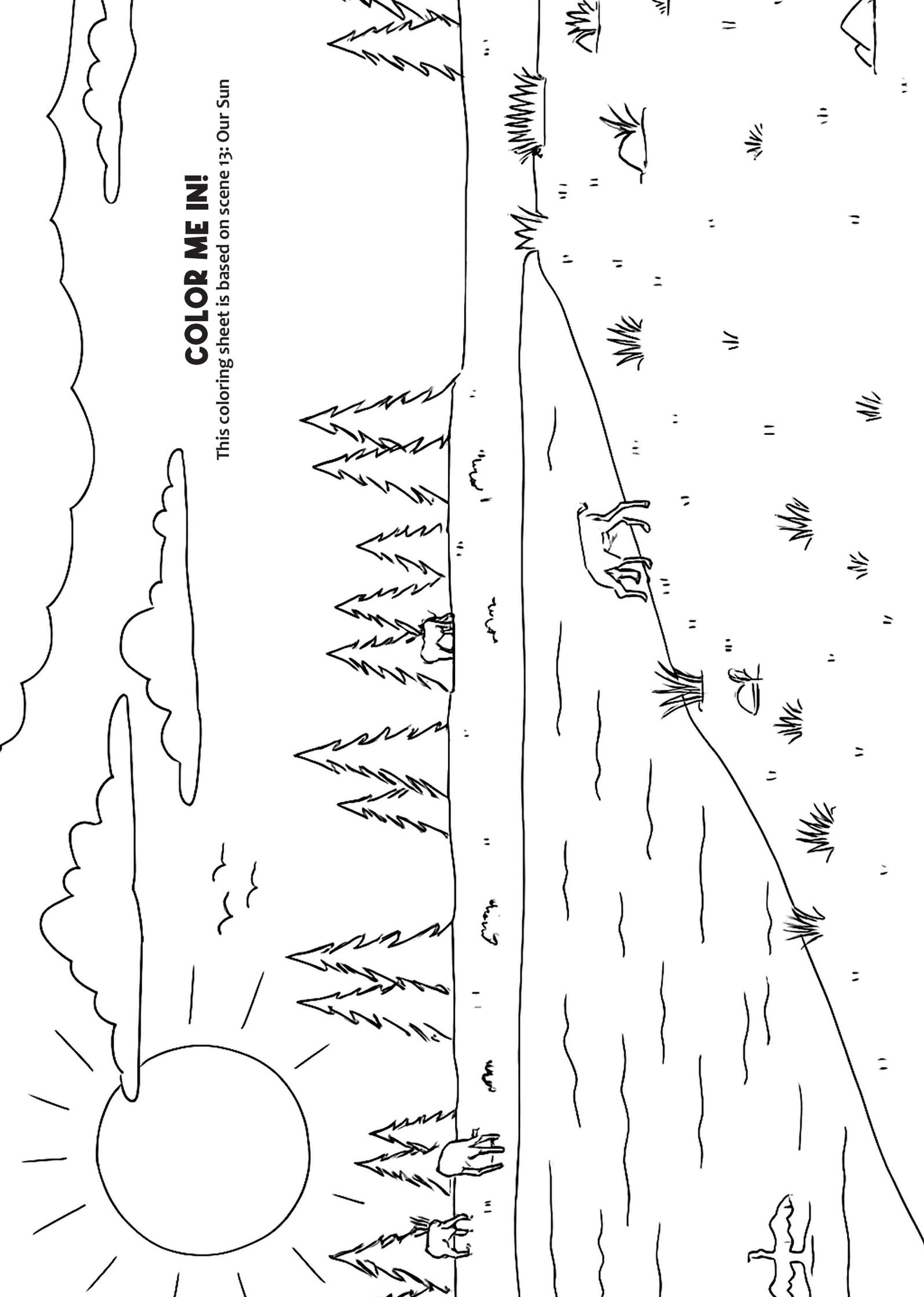
# COLOR ME IN!

This coloring sheet is based on scene 4: First Cells of Life



# COLOR ME IN!

This coloring sheet is based on scene 13: Our Sun



# DOT-TO-DOT

Starting from 1, draw a line connecting the numbers to create a picture. Why not colour it in afterwards?



# **YOUNG SOLAR PHYSICISTS' ACTIVITY ANSWERS**

Find the answers to the activities on the following pages.

# ACTIVITY ANSWERS

Check your answers against the correct answers below!

## FUN SUN WORDS

The answers below are for the “word search” activity on page 3.



## DISCOVERING THE SUN’S SECRETS

The answers below are for the “true or false” activity on page 4.

	SENTENCE	TRUE	FALSE
1	Volcanoes used to fill Earth’s atmosphere with toxic gases.	TRUE	
2	The scientists who study the Sun are called astronauts.		FALSE
3	Solar power is a type of renewable energy.	TRUE	
4	Plants can turn sunlight into oxygen.	TRUE	
5	Trees, plants and animals have always lived on Earth.		FALSE
6	The Sun is a star that helps plants grow.	TRUE	

## SOLAR SCRAMBLE

The answers below are for the “word scramble” activity page 5.

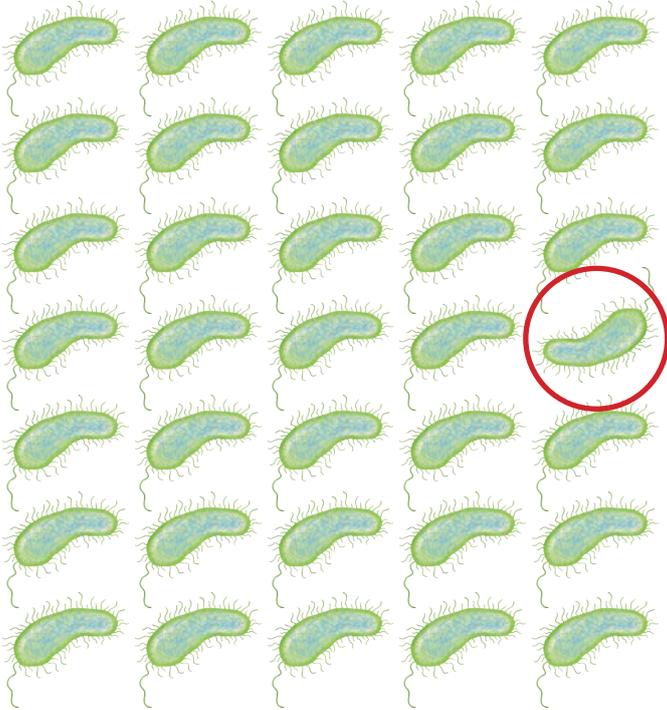
OHWASSD	_____	SHADOWS
DAHSE	_____	SHADE
RTAS	_____	STAR
INSTUHIL	_____	SUNLIGHT
OETSEELCP	_____	TELESCOPE
EHAT	_____	HEAT
ILSTTAELE	_____	SATELLITE

# ACTIVITY ANSWERS

Check your answers against the correct answers below!

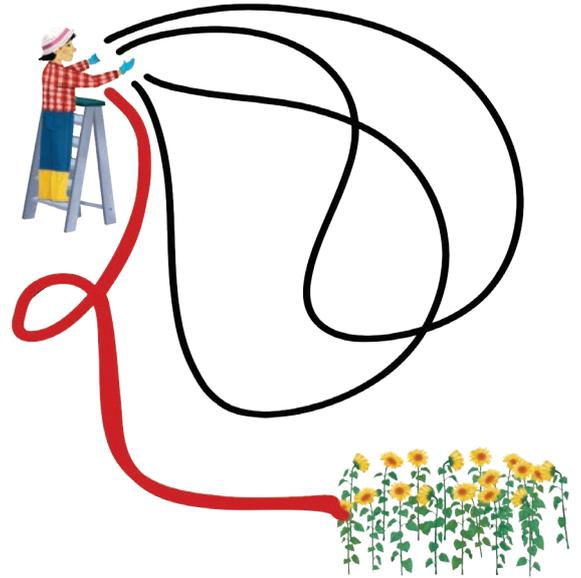
## FIND THE ODD CELL OUT

The answers below are for the “odd one out” activity on page 6.



## LOST IN THE FIELD

The answers below are for the “line maze” activity on page 7.



## DINOSAUR MIX-UP

The answers below are for the “match up” activity on page 10.

**Fact:**

My jaws contain 60 razor-sharp teeth and I had a bite three times stronger than a lion's.

**Fact:**

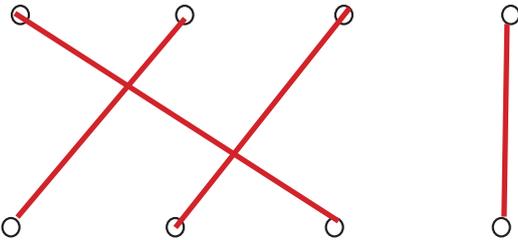
I had bony plates running along my back, which I used to scare off predators.

**Fact:**

I am one of the largest dinosaurs to ever exist! Because of my size, I had to eat a lot of plants.

**Fact:**

I had feathers and wings like a bird, but scientists don't know if I could fly properly.



I am...  
**A STEGOSAURUS**



I am...  
**AN ARGENTINOSAURUS**



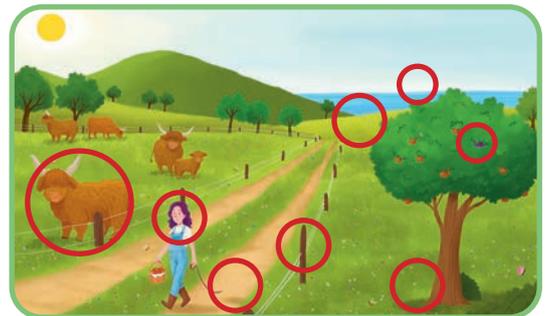
I am...  
**A T-REX**



I am...  
**AN ARCHAEOPTERYX**

## SNEAKY SUN

The answers below are for the “spot the difference” activity on page 11.





# ACTIVITY ANSWERS

Check your answers against the correct answers below!

## FIND THE SCIENTIST

The answers below are for the activity on page 18.



## SIMPLE SUMS

The answers below are for the activity on page 19.

$$\begin{array}{l} \text{Scientist} + \text{Scientist} - \text{Scorpion} = \boxed{1} \\ \text{Scorpion} - \text{Microbe} + \text{Scientist} = \boxed{6} \\ \text{Microbe} + \text{Scientist} + \text{Microbe} = \boxed{7} \\ \text{Scorpion} + \text{Scorpion} + \text{Microbe} = \boxed{12} \end{array}$$