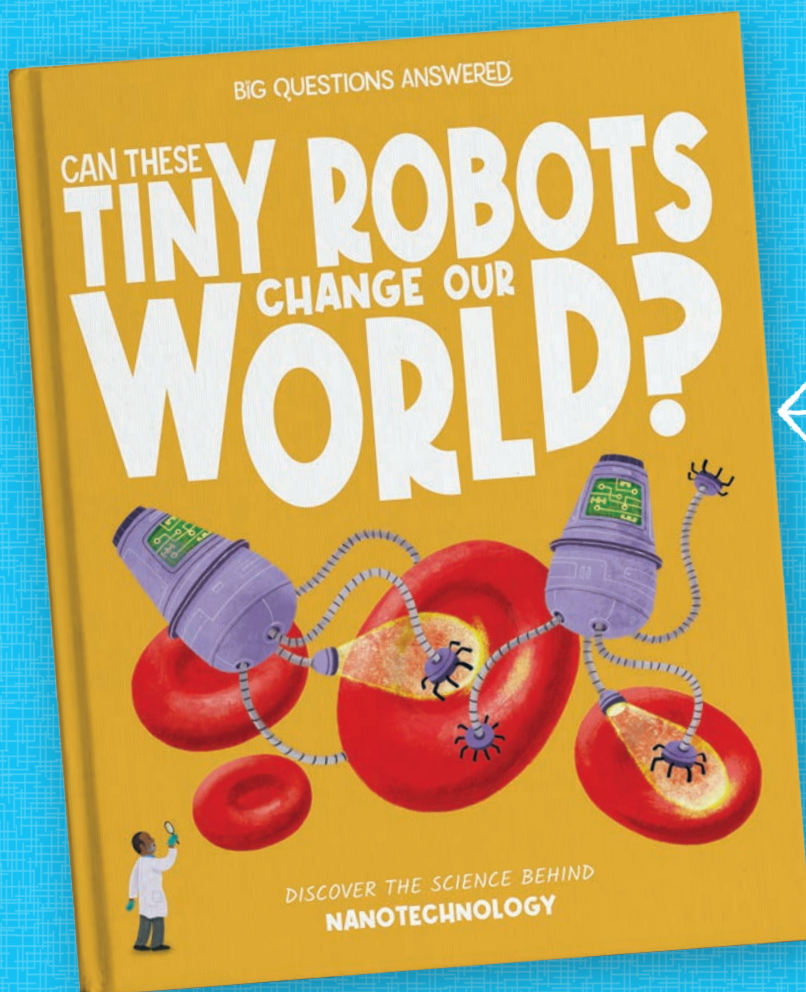


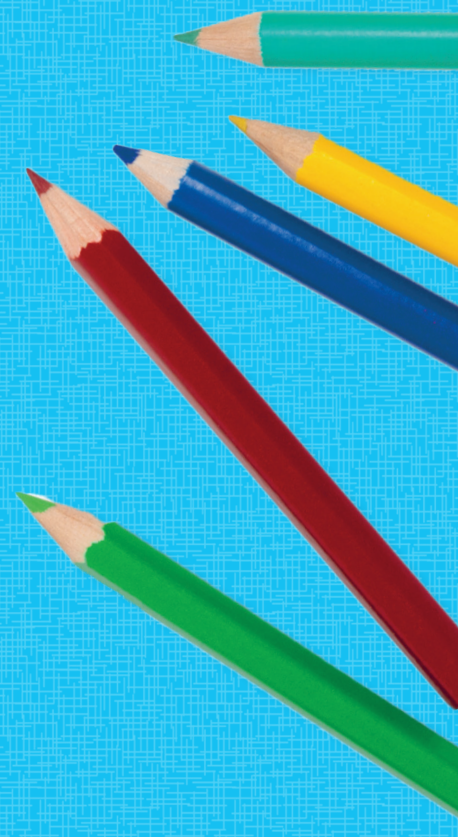
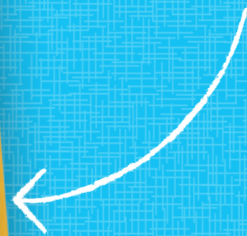
THE BIG QUESTIONS ANSWERED

YOUNG NANOTECHNOLOGISTS'

# ACTIVITY PACK



*Full of fun and exciting activities to accompany this book!*



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Picture Credits:

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

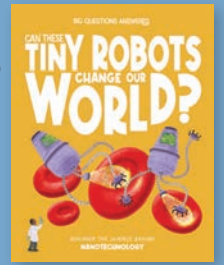
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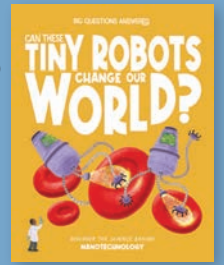
Copyright © 2025 Hungry Tomato Ltd, Truro, Cornwall, TR1 1QH



# NANO TRICKSTERS

That sneaky nanobot is playing games with us! Can you spot the 6 differences between the two scenes? Circle them when you spot them.





# MICROSCOPIC WORD HUNT

Scientists use all sorts of words when learning about nanotechnology! 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.

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

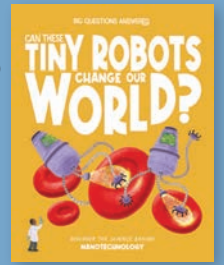
NANOBOT  
ATOM  
MOLECULE  
NANOSCALE

CARBON  
CHIP  
POWERFUL  
INVENT

TECH  
ELECTRIC  
METAL  
TINY

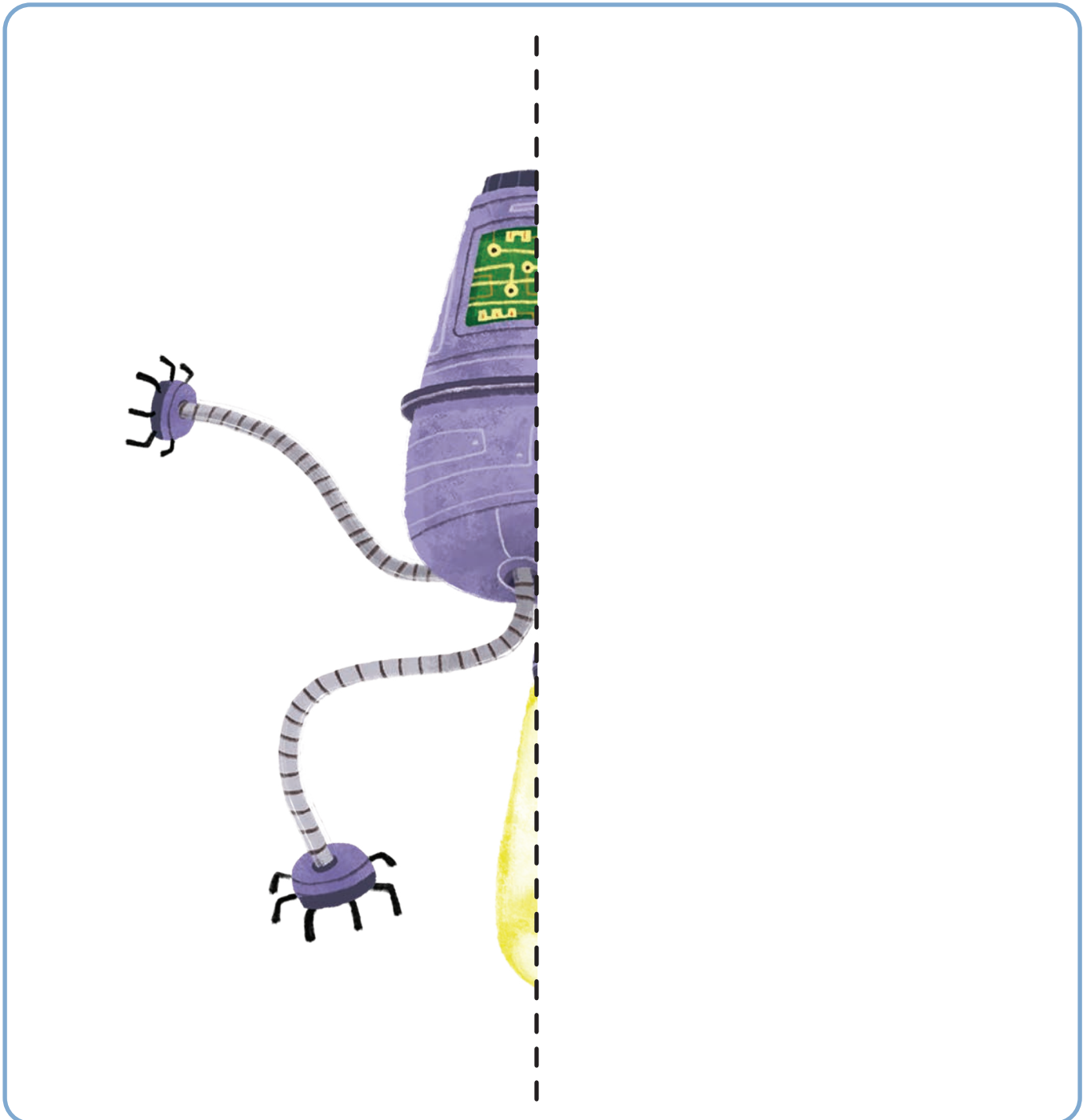
For reference to the Teachers' & Parents' Resources, this goes with 'Nanobots in Bloodstreams: Scene 3'.

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



## SMALL SCALE SYMMETRY

Nanostructures are often symmetrical at the molecular level. Below is an illustration of a half-built nanostructure – get creative and complete the drawing so it is fully symmetrical!  
Complete the picture by colouring it in.

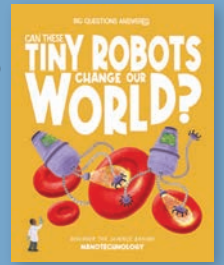




# CAN THESE TINY ROBOTS CHANGE OUR WORLD?

For reference to the Teachers' & Parents' Resources, this goes with 'Bots VS Bacteria: Scene 4'.

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



## TINY TECH TALES

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

NANOBOT

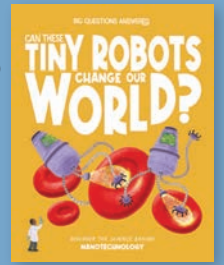
NANOSCIENTIST

NANOSCALE

A large, light-orange, torn-edge rectangular area containing 18 horizontal lines for writing a story.

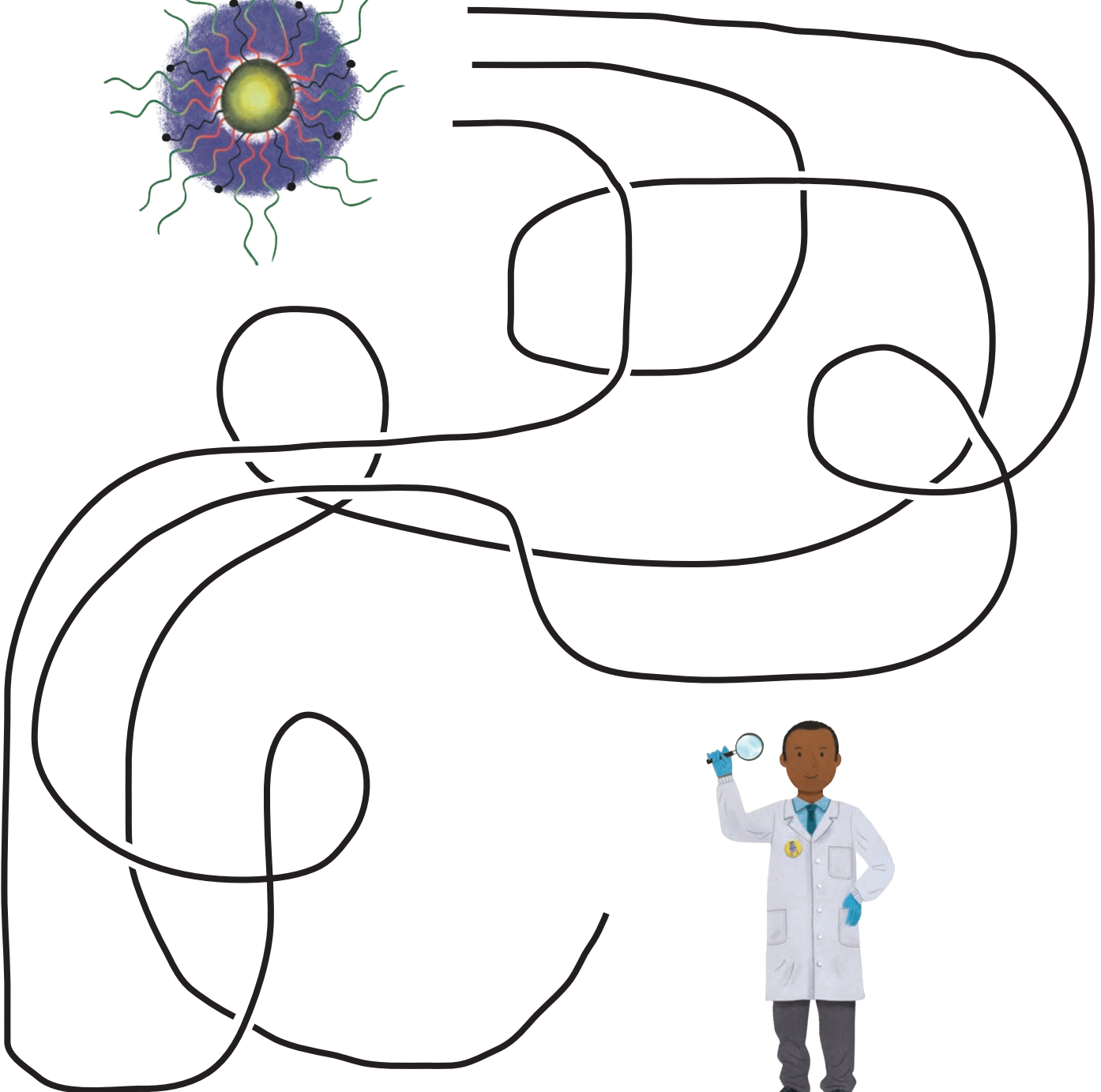
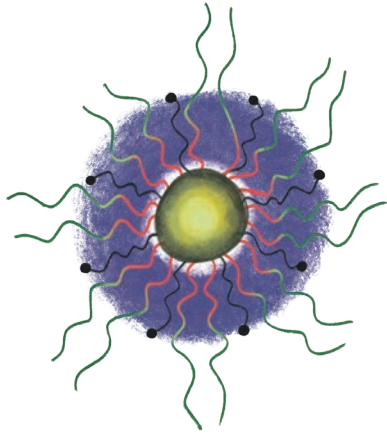
For reference to the Teachers' & Parents' Resources, this goes with 'Cleaning our Water: Scene 5'.

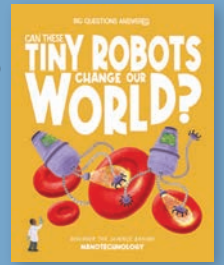
[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## RACE TO RECHARGE

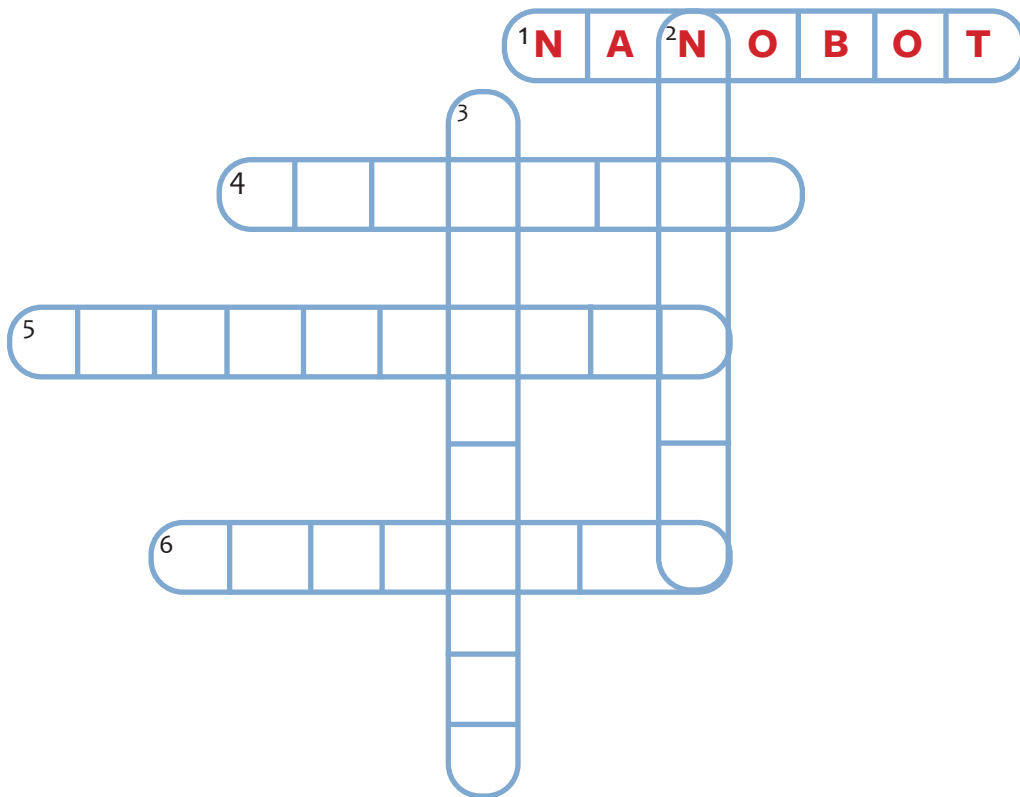
A nanobot has wandered too far from its charging station and is trying to find its way back to its inventor. Can you help the nanobot find its way back to recharge?





## CHANGING WORLD

Scientists use lots of words to describe nanotechnology. Use the clues below to work out the different terms they use and then fill in the boxes. The first one has been done for you.



- ~~NANOBOT~~
- MOLECULE
- MEDICINE
- SPACECRAFT
- NANOTUBE
- MICROSCOPE

### ACROSS

1. A robot too small to be seen without a microscope.
4. The most technical field nanobots can assist in.
5. A type of vehicle nanobots can repair.
6. A group of atoms bonded together.

### DOWN

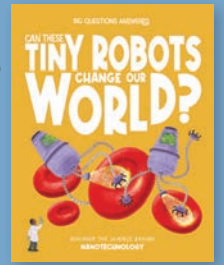
2. A material used to make electronics smaller and faster.
3. A piece of equipment you would need to see a nanobot.



# CAN THESE TINY ROBOTS CHANGE OUR WORLD?

For reference to the Teachers' & Parents' Resources, this goes with 'Repairs in Space: Scene 7'.

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



## NANOTECH DISCOVERY FILE

Choose a nanobot – any you like – and see what amazing things you can find out about it! Draw your chosen nanobot, colour it in, and fill in all of the information below.



*Draw the nanobot in here!*

This nanobot is called .....

How small is it? .....

What is it used for? .....

This nanobot helps with .....

Cool facts about this nanobot:

1. ....

2. ....

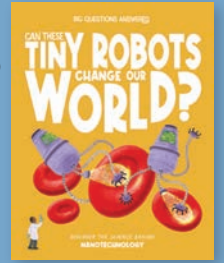
3. ....



# CAN THESE TINY ROBOTS CHANGE OUR WORLD?

For reference to the Teachers' & Parents' Resources, this goes with 'Tests on Venus: Scene 8'.

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



## NANO THINK TANK

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

**What do you find most interesting about nanotechnology?**

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

**Would you like to see nanobots used in hospitals? Why or why not?**

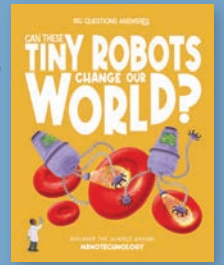
.....  
.....  
.....

**If you were a nanoscientist, what would you most enjoy – inventing new nanobots, or making discoveries about new materials?**

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

**What would be your big question about nanotechnology?**

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



# A SECRET CODE!

You are looking through a microscope when you spot a strange nanoscale code. Suddenly, you realise it's a hidden message! Can you use the code below to work out what the message says?

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

--	--	--	--	--	--	--	--

--	--	--

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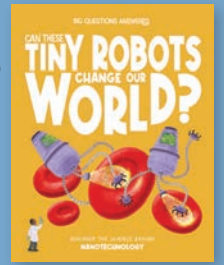
--	--

--	--	--	--	--	--	--

--	--	--	--

--	--	--	--

!



## NANO WONDERS

Can you use the words below to fill the blanks and discover some stunning nanotechnology facts? Each answer can only be used once.

molecules

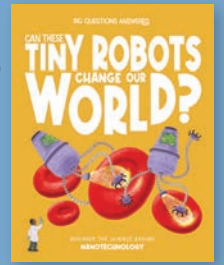
invisible

strong

light

computer

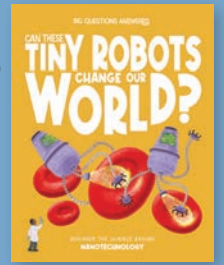
1. Nanotechnology has already been used to make faster and smaller \_\_\_\_\_ chips.
2. Some nanomaterials are so small they appear \_\_\_\_\_.
3. Carbon nanotubes are stronger than steel but very \_\_\_\_\_.
4. Graphene is so thin it's almost weightless, yet incredibly \_\_\_\_\_.
5. Nanotechnology allows scientists to move single \_\_\_\_\_ around like building blocks.



## TRUE OR TINY?

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

	SENTENCE	TRUE	FALSE
<b>1</b>	Nanotechnology works at the scale of atoms and molecules.		
<b>2</b>	All nanotechnology can be seen with the human eye.		
<b>3</b>	Nanobots may one day deliver medicine directly inside the human body.		
<b>4</b>	Nanotechnology is only used in medicine.		
<b>5</b>	Graphene is just one atom thick.		



# MATCH THE MARVEL

Scientists have made lots of exciting discoveries and new inventions thanks to nanotechnology. Can you match up the photograph and name of each invention with its description? Draw a line to match up the picture with the correct name.

**Fact:**

I am stronger than steel but lighter than plastic.



**Fact:**

I can be programmed to deliver medicine inside the body.



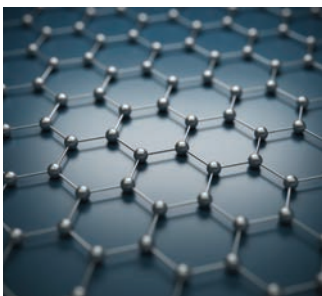
**Fact:**

I am just one atom thick and can conduct electricity better than copper.



**Fact:**

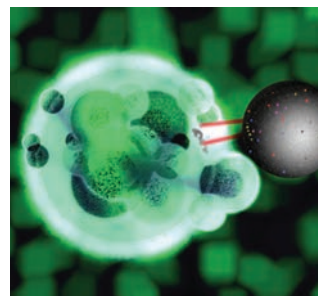
I am so small that I can change colour depending on my size.



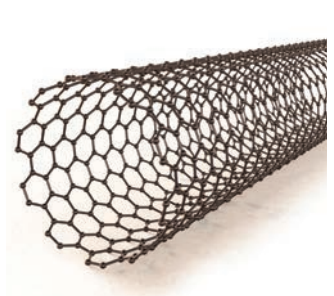
*I am...*  
**GRAPHENE**



*I am...*  
**A QUANTUM DOT**



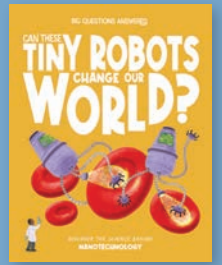
*I am...*  
**A DNA NANOBOT**



*I am...*  
**A CARBON NANOTUBE**

For reference to the Teachers' & Parents' Resources, this goes with 'Many Unknowns: Scene 13'.

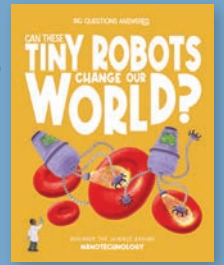
[www.thebigquestionsanswered.com](http://www.thebigquestionsanswered.com)



## ODD BOT OUT

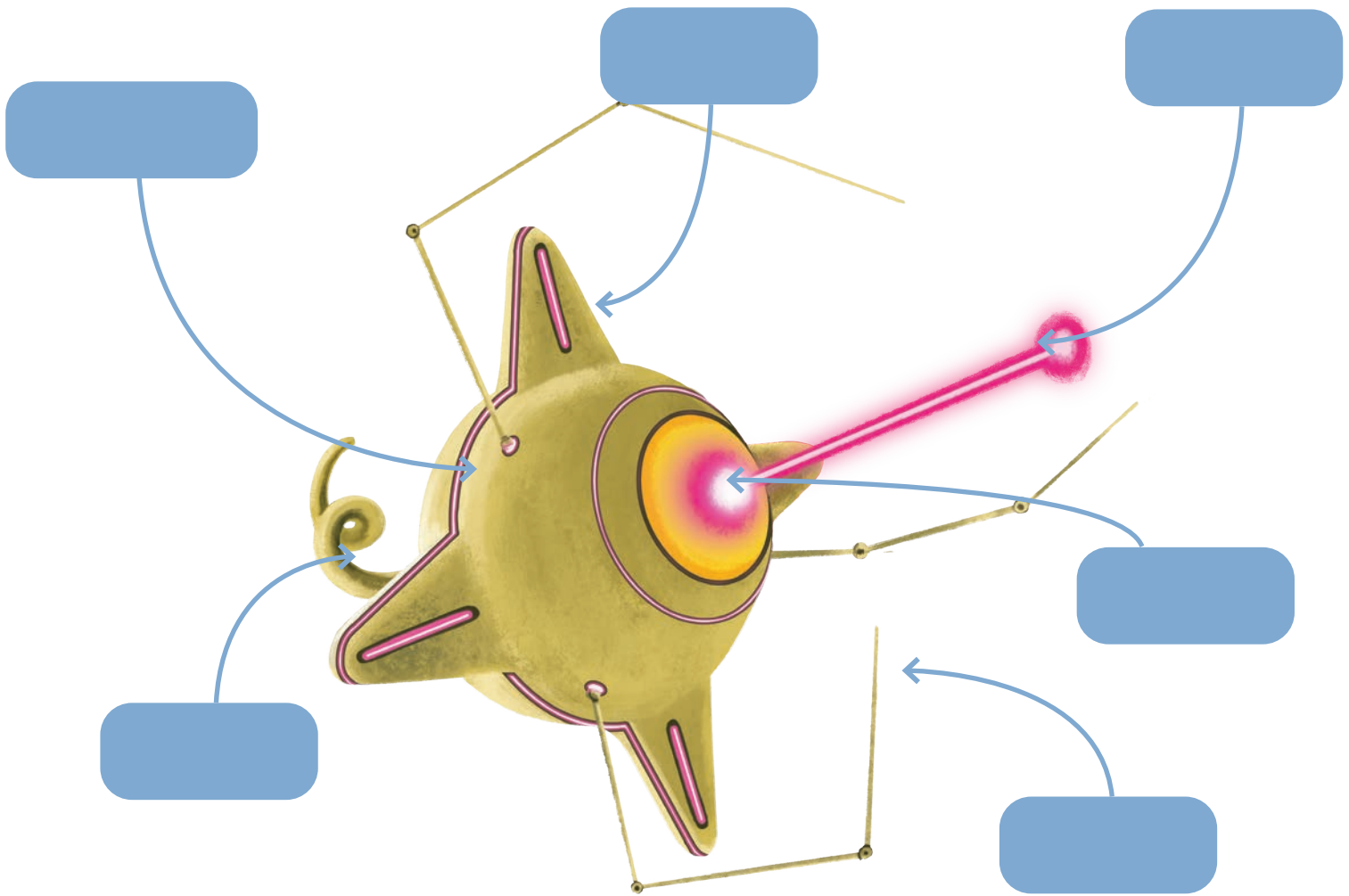
Look at all these nanostructures! Can you spot the one that doesn't belong?





# BUILD-A-BOT

Nanobots come in many shapes and designs. Can you fill in the boxes to label this nanobot's parts? Each answer can only be used once.



SENSOR

ARM

EYE

LASER

PROPELLER

CORE

# **MORE FUN NANOTECHNOLOGY ACTIVITIES**

## **COLOURING 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 activities.

# FIND THE SCIENTIST

There are lots of different scientists below. Can you find the nanotechnologist?  
Circle them when you find them – there's only one!



# SIMPLE SUMS

Below are 3 objects which represent different numbers.

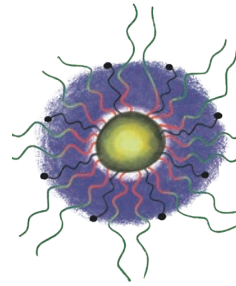
Work out the sum based on what each object represents and write your answers in the boxes.



= 2



= 5



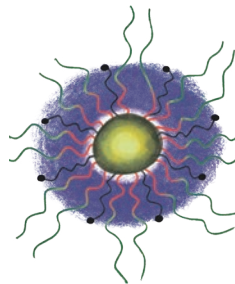
= 3



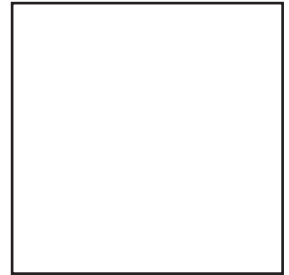
+



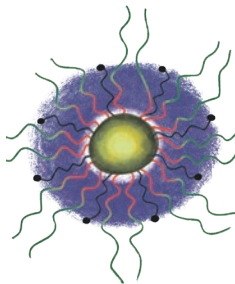
-



=



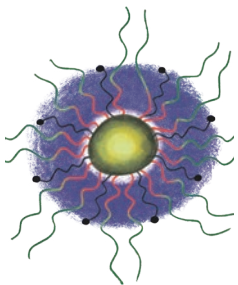
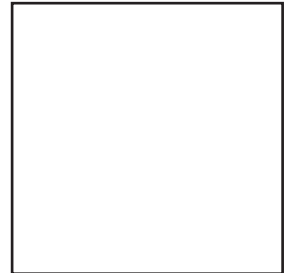
-



+



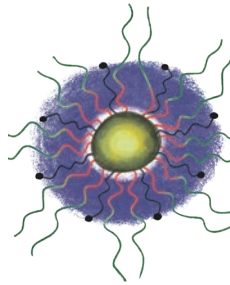
=



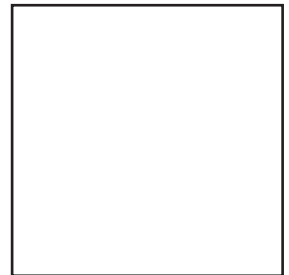
+



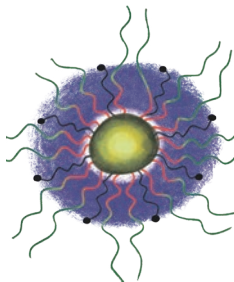
+



=



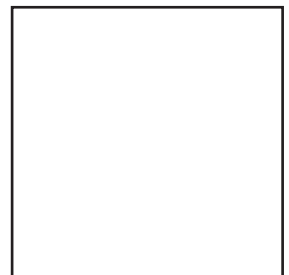
+



-

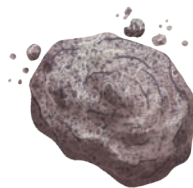


=



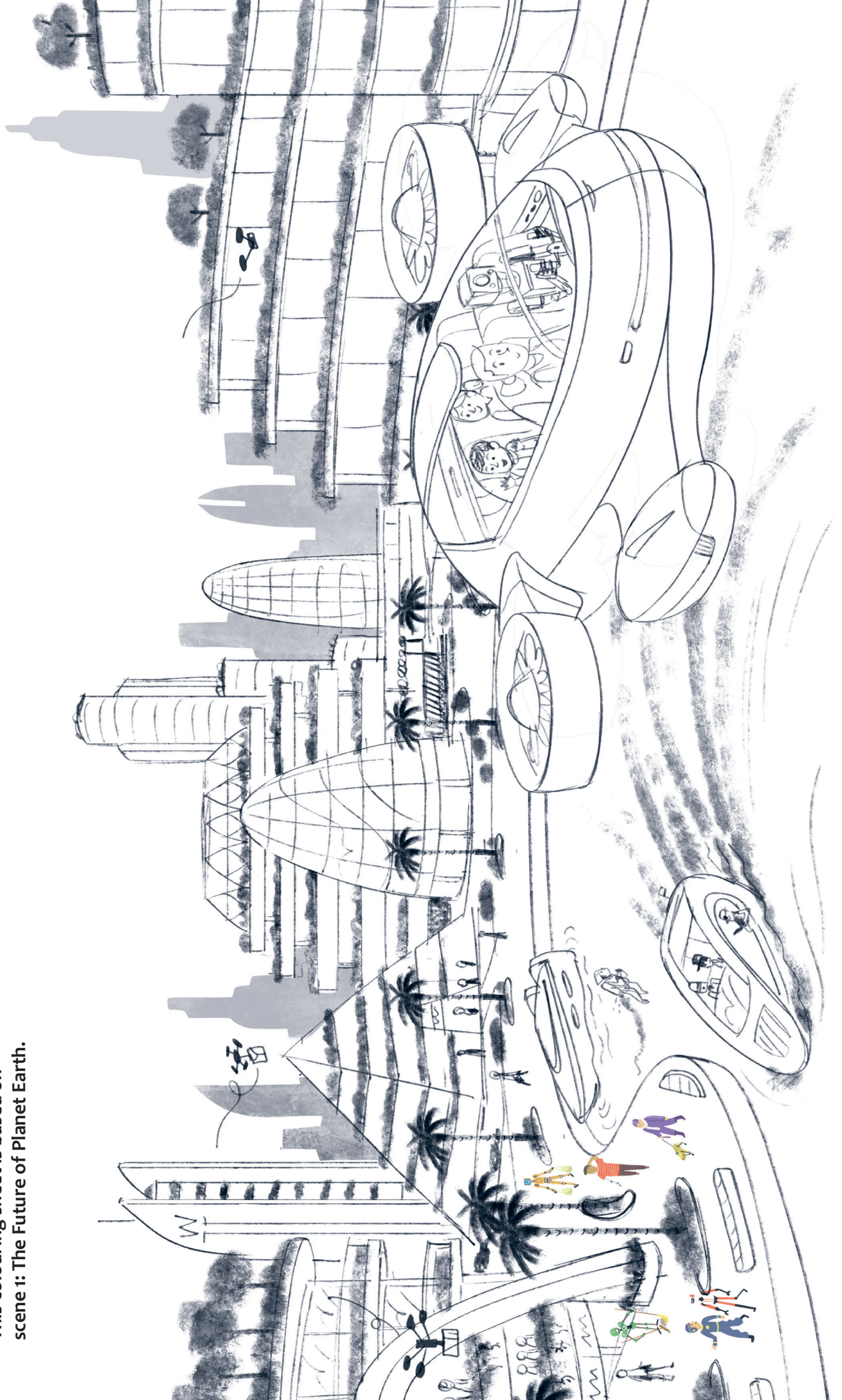
# MATCH THE SHAPE

Can you match each shadow to the correct picture? Draw a line to connect them.



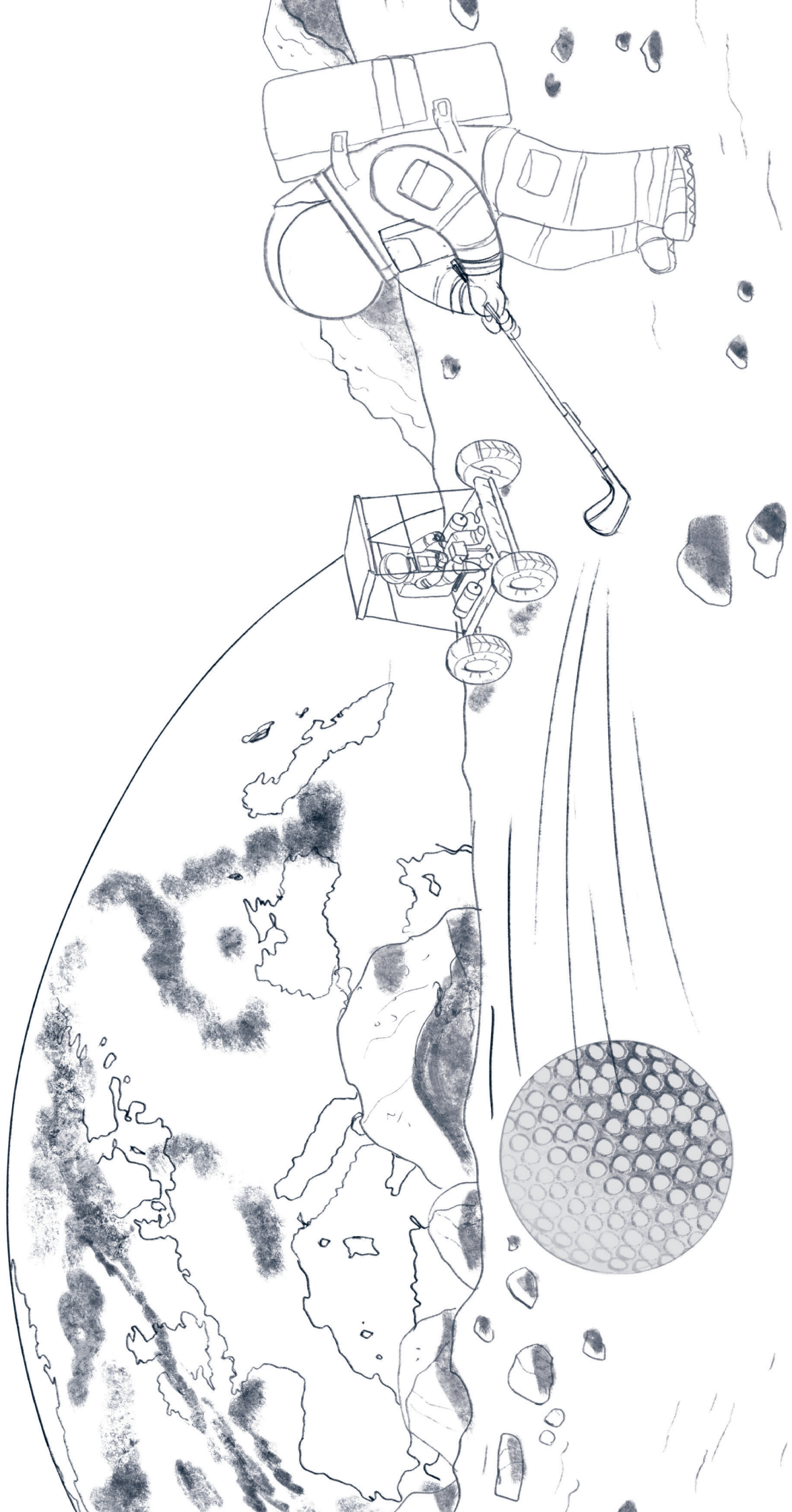
# COLOUR ME IN!

This colouring sheet is based on scene 1: The Future of Planet Earth.



# COLOUR ME IN!

This colouring sheet is based on scene 2:  
Introducing the Nanometre.



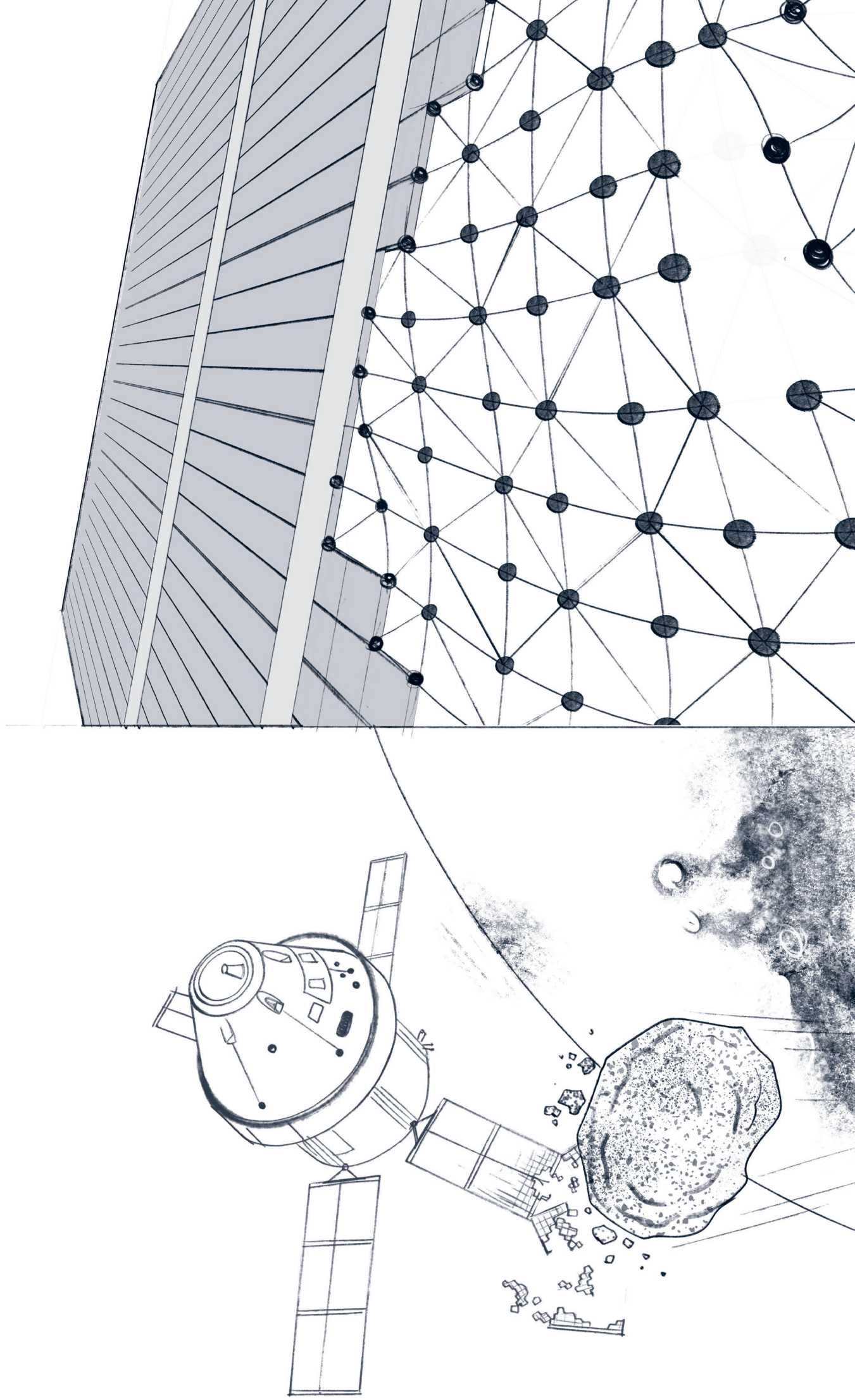
# COLOUR ME IN!

This colouring sheet is based on scene 3: Nanobots in Bloodstreams.



# COLOUR ME IN!

This colouring sheet is based on scene 7: Repairs in Space.



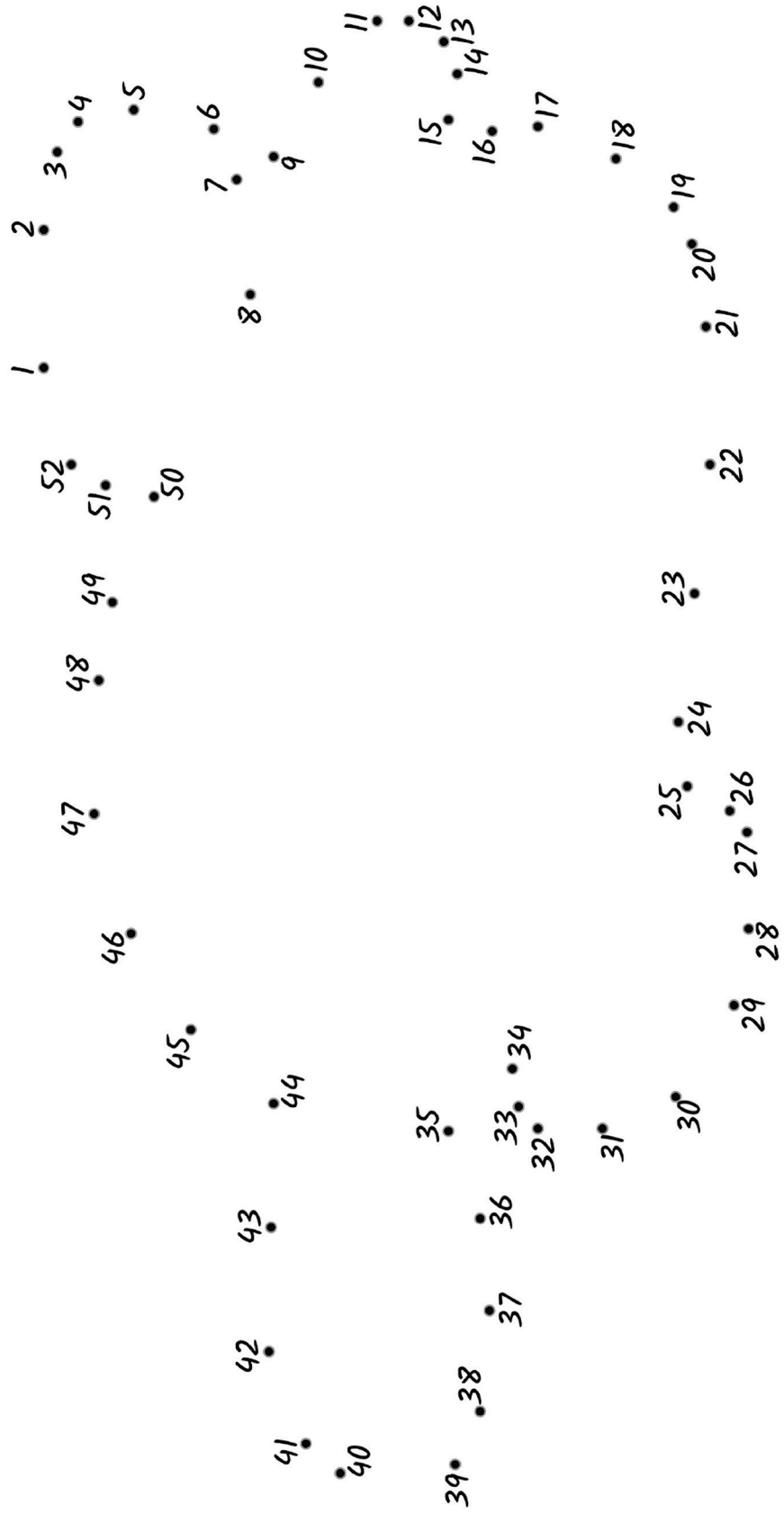
# COLOUR ME IN!

This colouring sheet is based on scene 11: Faster Food.



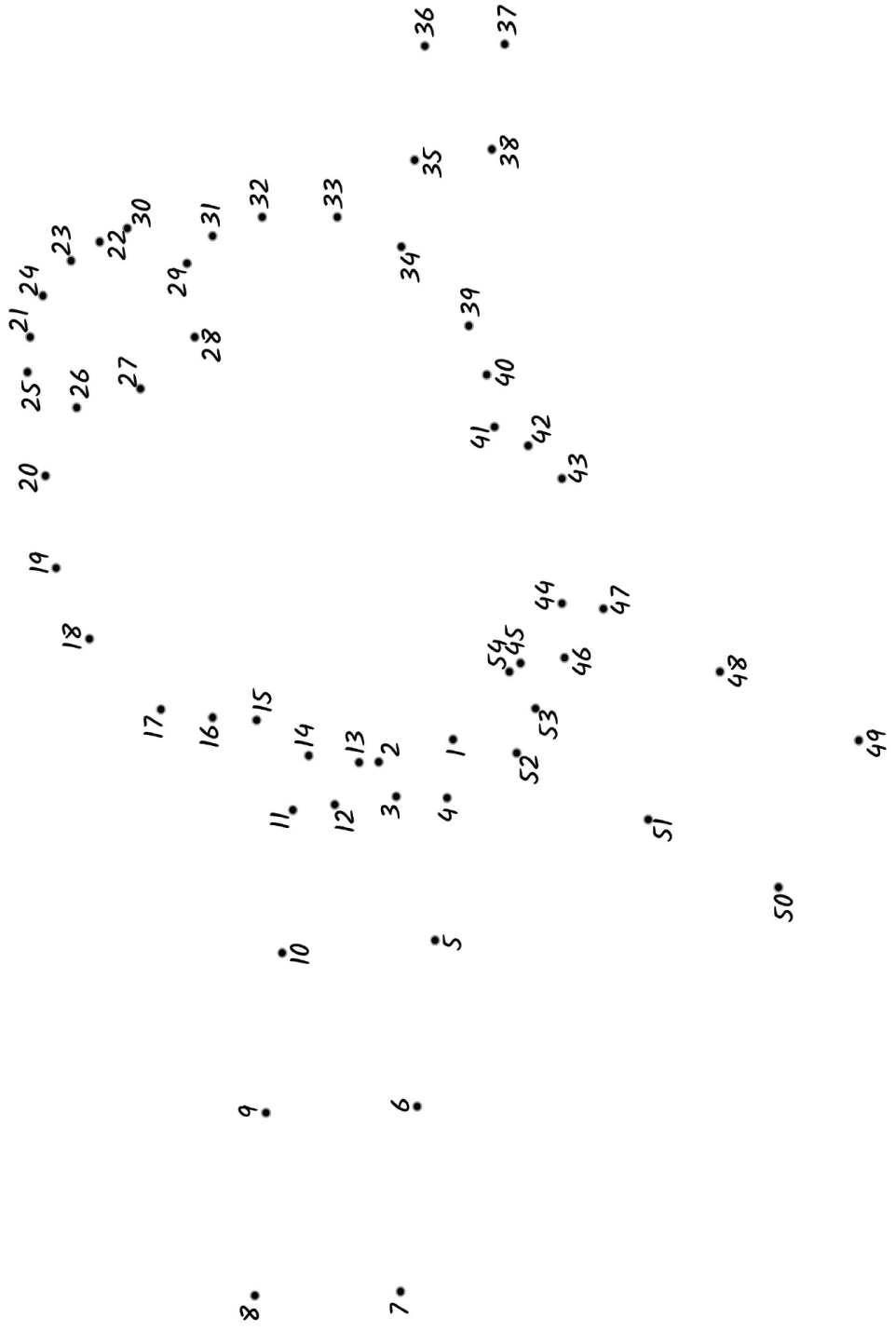
# DOT-TO-DOT

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



# DOT-TO-DOT

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



# **YOUNG NANOTECHNOLOGISTS' ACTIVITY ANSWERS**

Find the answers to the activities on the following pages.



## A SECRET CODE! ANSWERS

The answers below are for the 'decoding challenge' activity on page 11.

**NANOTECH CAN MAKE MATERIALS TWO HUNDRED TIMES STRONGER THAN STEEL BUT IS THINNER THAN PAPER!**

## NANO WONDERS ANSWERS

The answers below are for the 'fill in the blanks' activity on page 12.

- Nanotechnology has already been used to make faster and smaller **COMPUTER** chips.
- Some nanomaterials are so small that they appear **INVISIBLE**.
- Carbon nanotubes are stronger than steel but very **LIGHT**.
- Graphene is so thin it's almost weightless, yet incredibly **STRONG**.
- Nanotechnology allows scientists to move single **MOLECULES** around like building blocks.

## TRUE OR TINY? ANSWERS

The answers below are for the 'true or false' activity on page 13.

	SENTENCE	TRUE	FALSE
1	Nanotechnology works at the scale of atoms and molecules.	<b>TRUE</b>	
2	All nanotechnology can be seen with the human eye.		<b>FALSE</b>
3	Nanobots may one day deliver medicine directly inside the human body.	<b>TRUE</b>	
4	Nanotechnology is only used in medicine.		<b>FALSE</b>
5	Graphene is just one atom thick.	<b>TRUE</b>	

## MATCH THE MARVEL ANSWERS

The answers below are for the 'match up' activity on page 14.

Fact: I am stronger than steel but lighter than plastic.      Fact: I can be programmed to deliver medicine inside the body.      Fact: I am just one atom thick and can conduct electricity better than copper.      Fact: I am so small I can change colour depending on my size.

I am...  
**GRAPHENE**

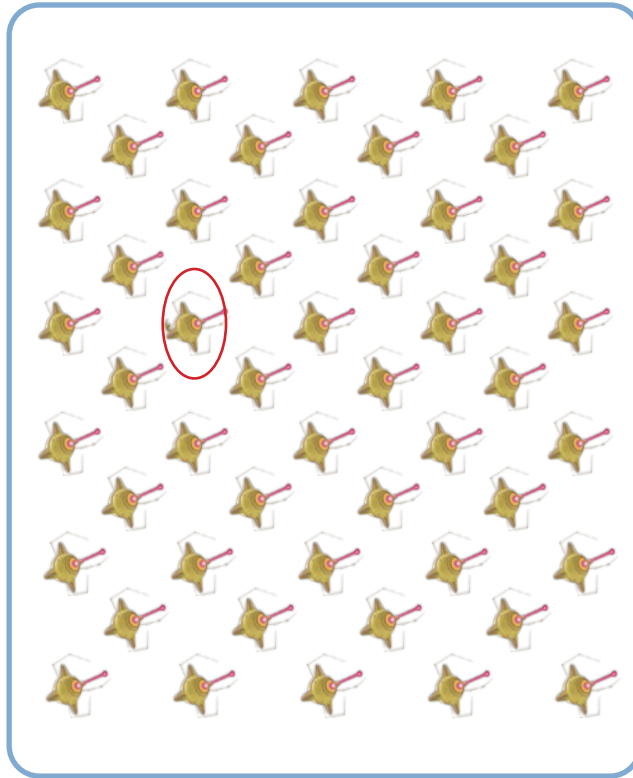
I am...  
**A QUANTUM DOT**

I am...  
**A DNA NANOBOT**

I am...  
**A CARBON NANOTUBE**

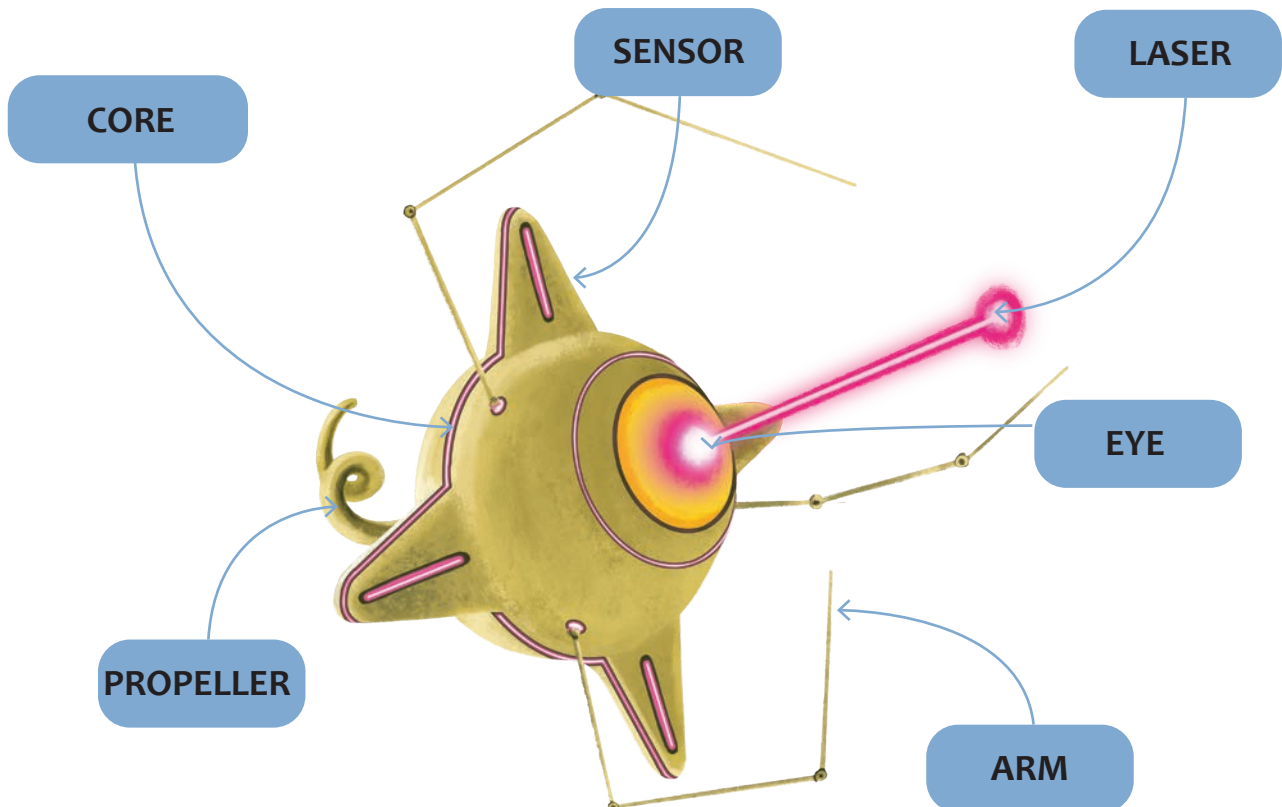
## ODD BOT OUT ANSWERS

The answers below are for the 'odd one out' activity on page 15.



## BUILD-A-BOT ANSWERS

The answers below are for the 'label the part' activity on page 16.



# EXTRA ACTIVITY ANSWERS

Check your answers against the correct answers below!

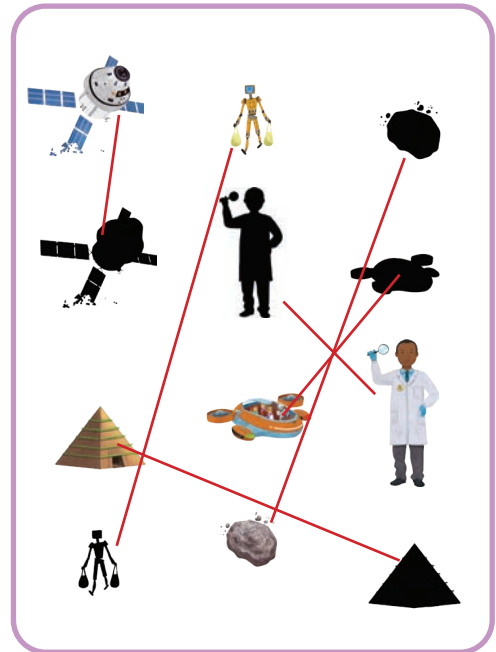
## FIND THE SCIENTIST

The answers below are for the activity on page 18.





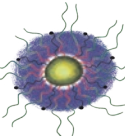

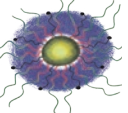

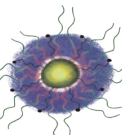

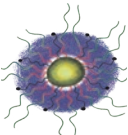

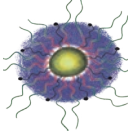

## MATCH THE SHAPE

The answers below are for the activity on page 19.



## SIMPLE SUMS

The answers below are for the activity on page 20.

	+		-		=	<b>1</b>
	-		+		=	<b>4</b>
	+		+		=	<b>8</b>
	+		-		=	<b>6</b>