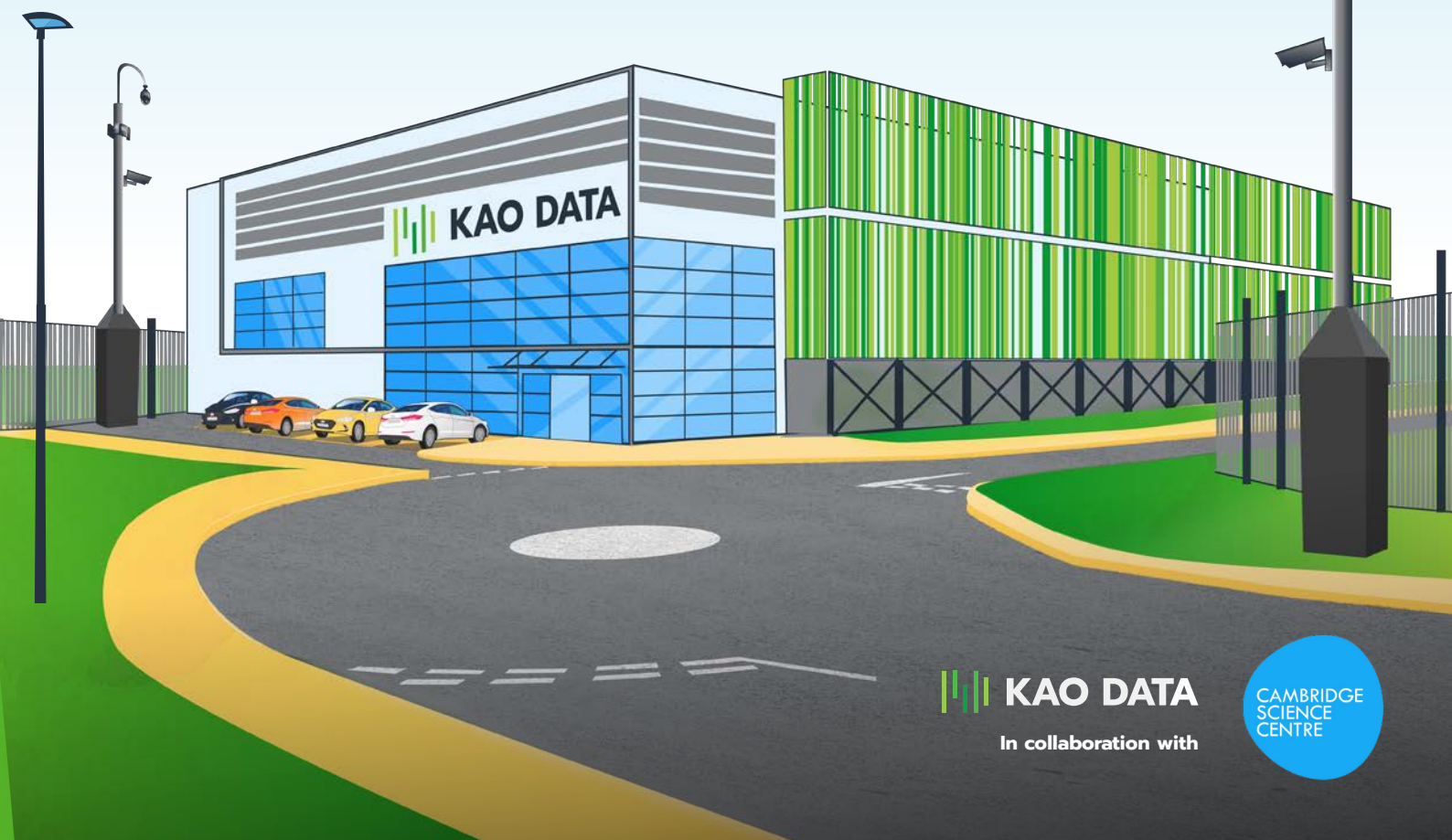
KAO ACADEMY

Build a Data Centre!



KAO DATA

In collaboration with

CAMBRIDGE SCIENCE CENTRE

Build your own data centre like Kao Data!

Data centres help run our world, but most people don't even know what they are!

A data centre is a really big, really strong building that has hundreds of special computers inside called servers. Every time you look at a website, play a tune on Spotify, upload a photo to Instagram, do a Zoom call, or play Minecraft, you are using information (data) that is actually stored on these servers.

Your family will probably be connected to a data centre hundreds of times a day. And without data centres the Internet wouldn't work.

Data centres need to be really secure and super-clean and they are very high-tech. They use lots of power (electricity) and are designed, built and run by some very clever people!

This booklet shows you how to build your own data centre. It looks like Kao Data, an award-winning data centre just outside of London.

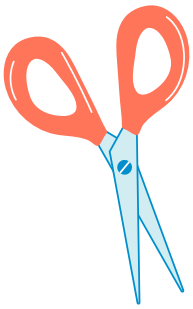
Simply follow the instructions on pages 3, 4 and 5. And when you're finished, why not email a picture of your model to: kaoacademy@kaodata.com
(You'll be using a data centre when you do this!)

This is what your completed data centre model should look like!

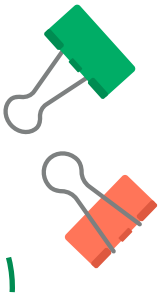
Instructions

You will need:

- Pages 6, 7 and 8 printed out onto white card or thick paper
- Scissors
- Glue stick



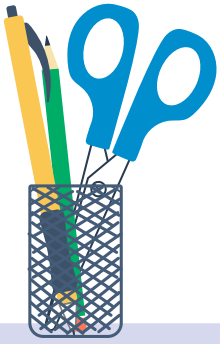
1. Print out the base of the data centre (page 6) and the cut-out sheets (pages 7 and 8) on to A4 card or paper.



2. Carefully cut out all the shapes (pages 7 and 8) - along the green dotted lines. (Be careful not to cut the flaps off!)

3. Next, fold the flaps - along the red solid lines. (We'll use these to attach the pieces together).

Fold ——— Fold and stick



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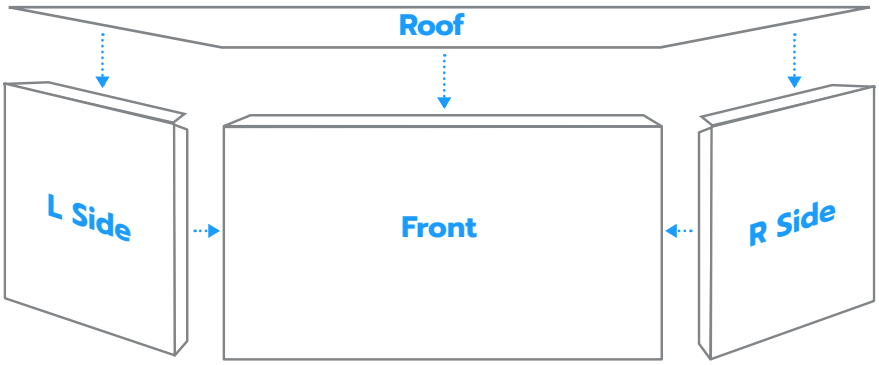
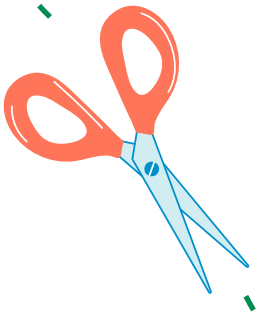
4.

Using a glue stick, get building! Glue each flap on the Front, Back and Sides of the data centre and stick the matching numbers together. Then attach the Roof in the same way.



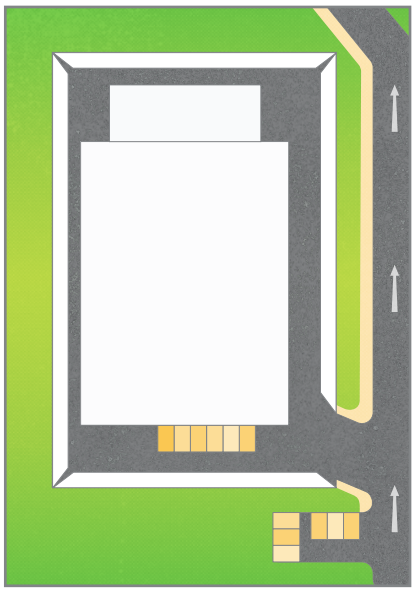


Did you know...

Although this model is pretty small, many data centres such as Kao Data, are huge. The largest data centre in the world is in China and is bigger than 168 football pitches!

5.

Your data centre is now ready to be attached to the base (page 6). Stick it down carefully on the space shown.



Did you know...

Data centres must be in safe and secure locations, protecting their servers from floods, severe weather, earthquakes and even volcanoes. Data centres can be found all over the world and even in space!

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6.

Every data centre needs back-up generators and it's time to build yours! Carefully fold the generator cut-out so it has 3 sides and a roof, and glue it to the back of the data centre. There's a space on the base for it.

Did you know...

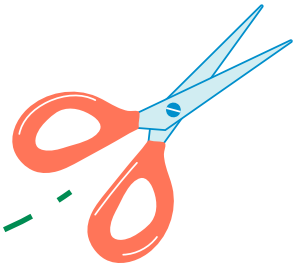
It's really important that data centres always have power so the servers stay on. Back-up generators help a data centre stay up and running even during a power cut.

7.

Finally, you need to make your data centre secure. Stick the fences onto the base around the outside (perimeter) of the data centre. (Make sure the gate is in the right place otherwise no one can get in!). You could use a little bit of sticky tape to join the corners of the fences together.

Did you know...

It's very important a data centre is secure. At Kao Data we use CCTV cameras, large fences, special gates and security guards to make sure only the right people can enter. If your name's not down, you're not coming in!



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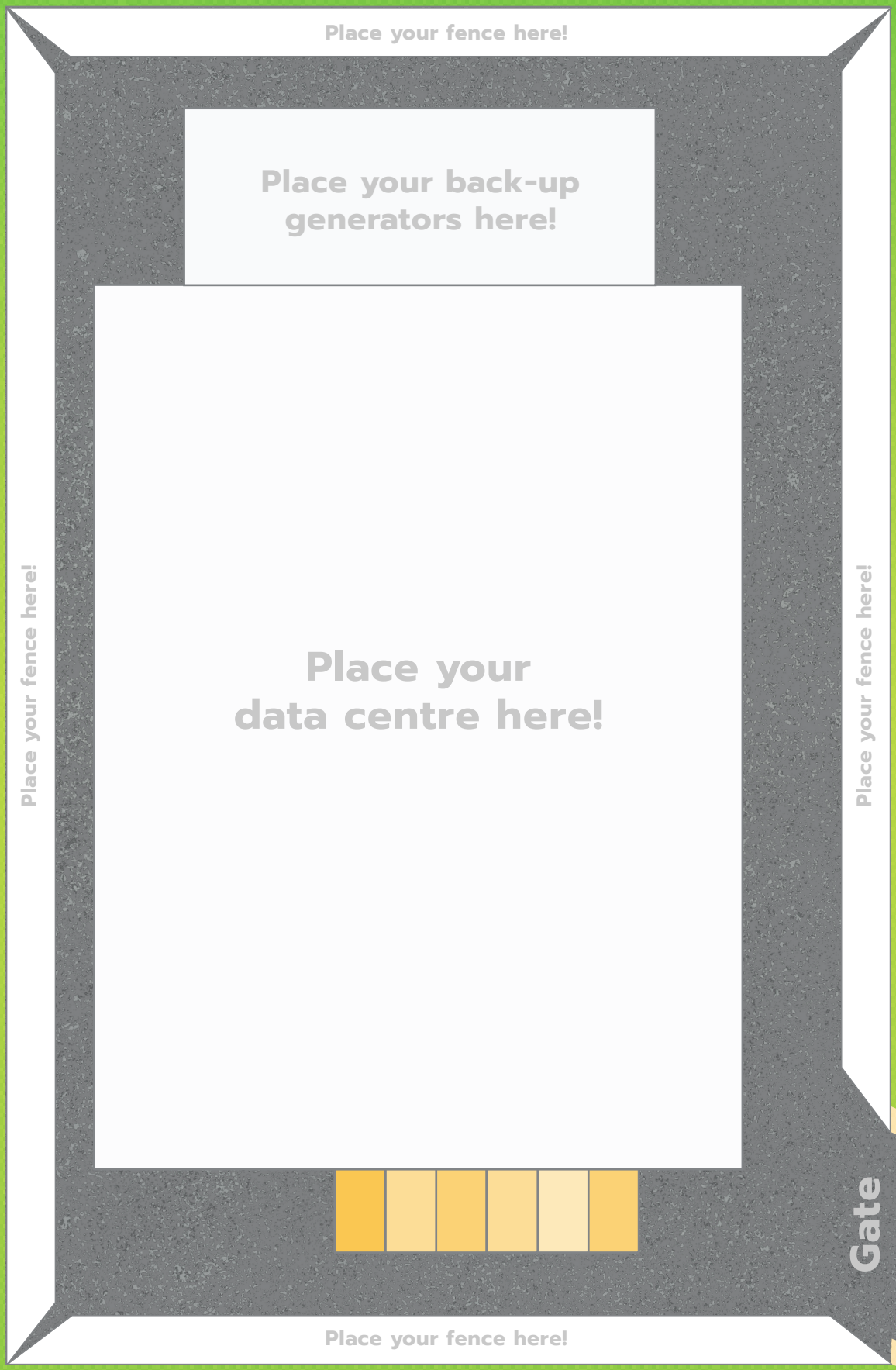
Place your fence here!
Place your back-up generators here!
Place your data centre here!
Place your fence here!
Place your fence here!
Gate
Place your fence here!

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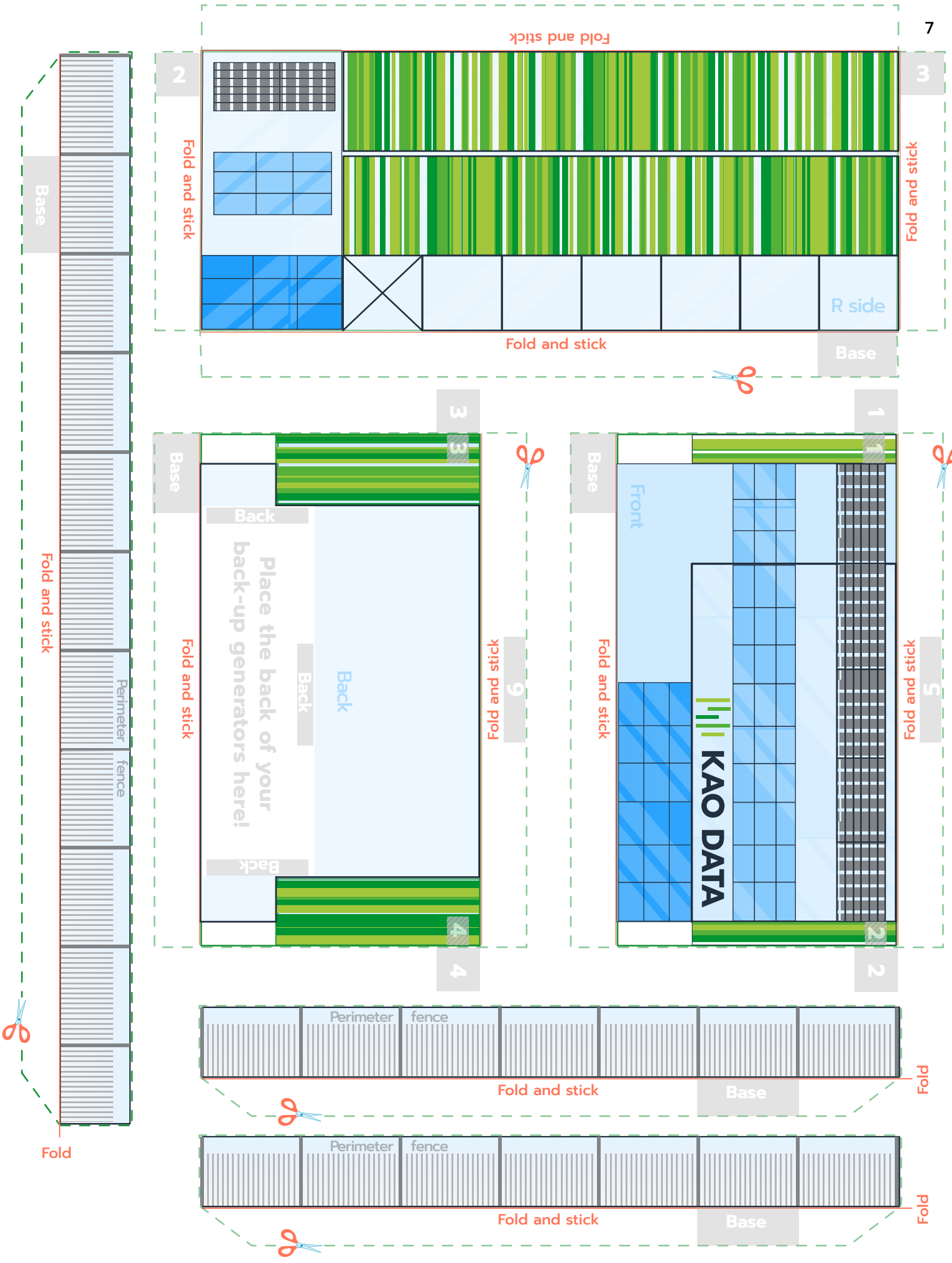
Fold and stick
2
3
Fold and stick
Fold and stick
R side
Fold and stick
Base
Base
Fold and stick
Fold
Perimeter
fence
3
Base
Back
Place the back of your back-up generators here!
Back
Back
Fold and stick
Fold and stick
6
4
4
1
Base
Front
KAO DATA
Fold and stick
Fold and stick
5
2
2
Perimeter
fence
Fold and stick
Base
Fold
Perimeter
fence
Fold and stick
Base
Fold

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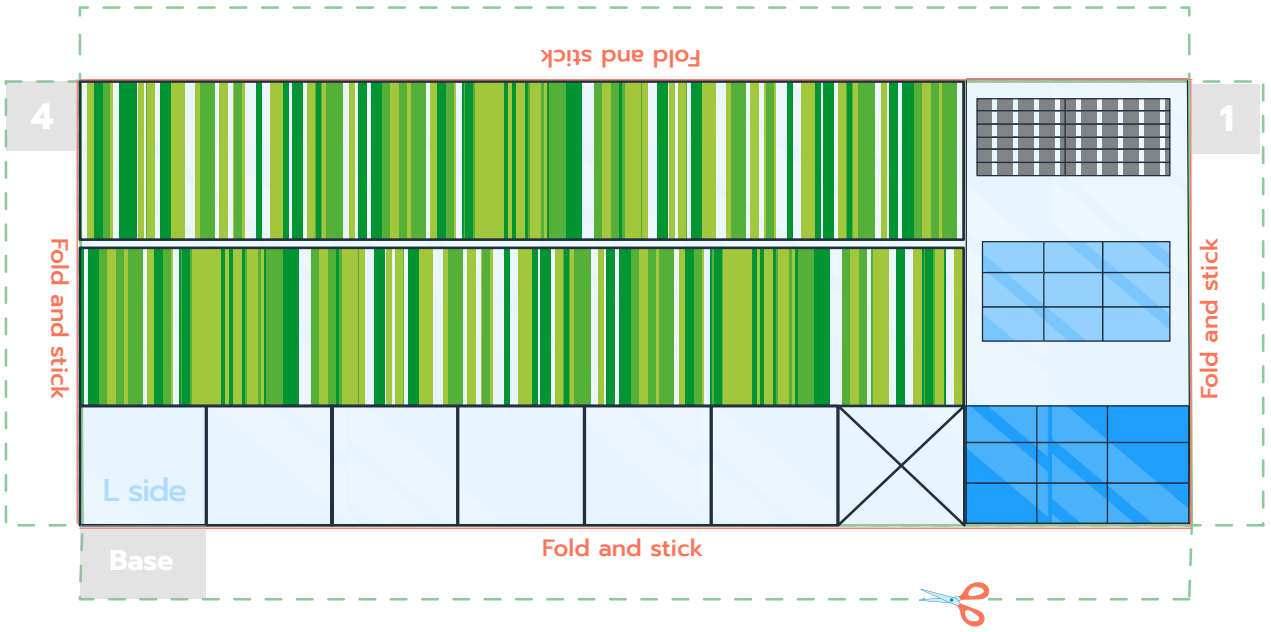
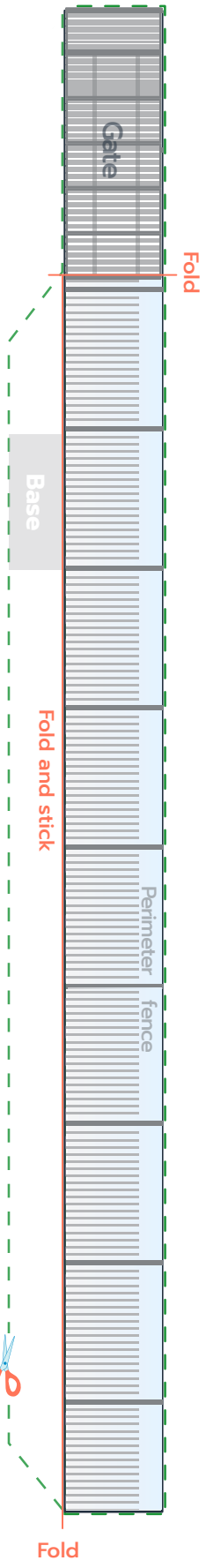
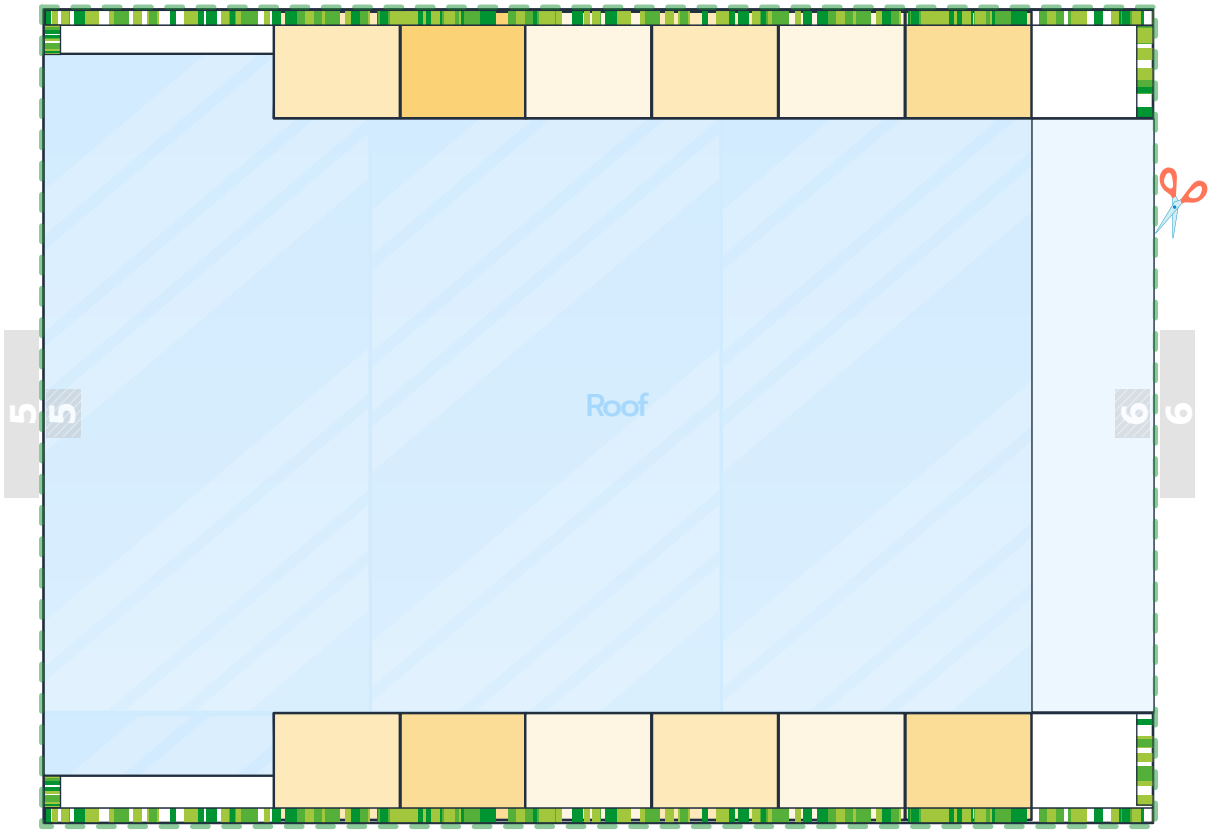
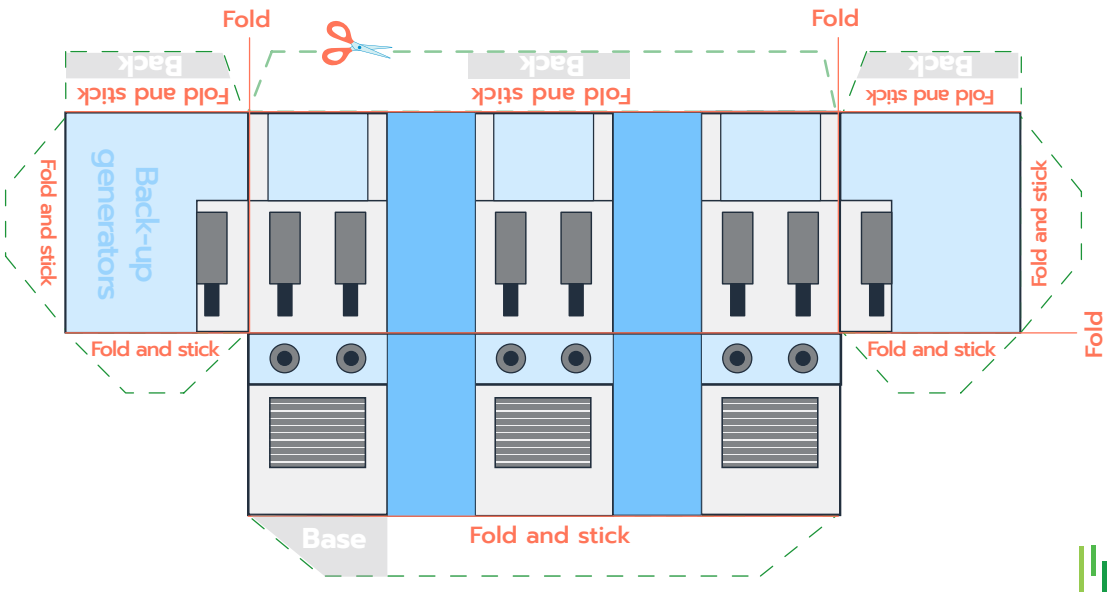

Fold and stick
4
1
Fold and stick
Fold and stick
L side
Base
Fold and stick


Gate
Fold
Base
Fold and stick
Perimeter fence
Fold


5
5
Roof
6
6


Fold
Fold
Back
Fold and stick
Back
Fold and stick
Back
Fold and stick
Back-up generators
Fold and stick
Fold and stick
Fold and stick
Fold
Base
Fold and stick

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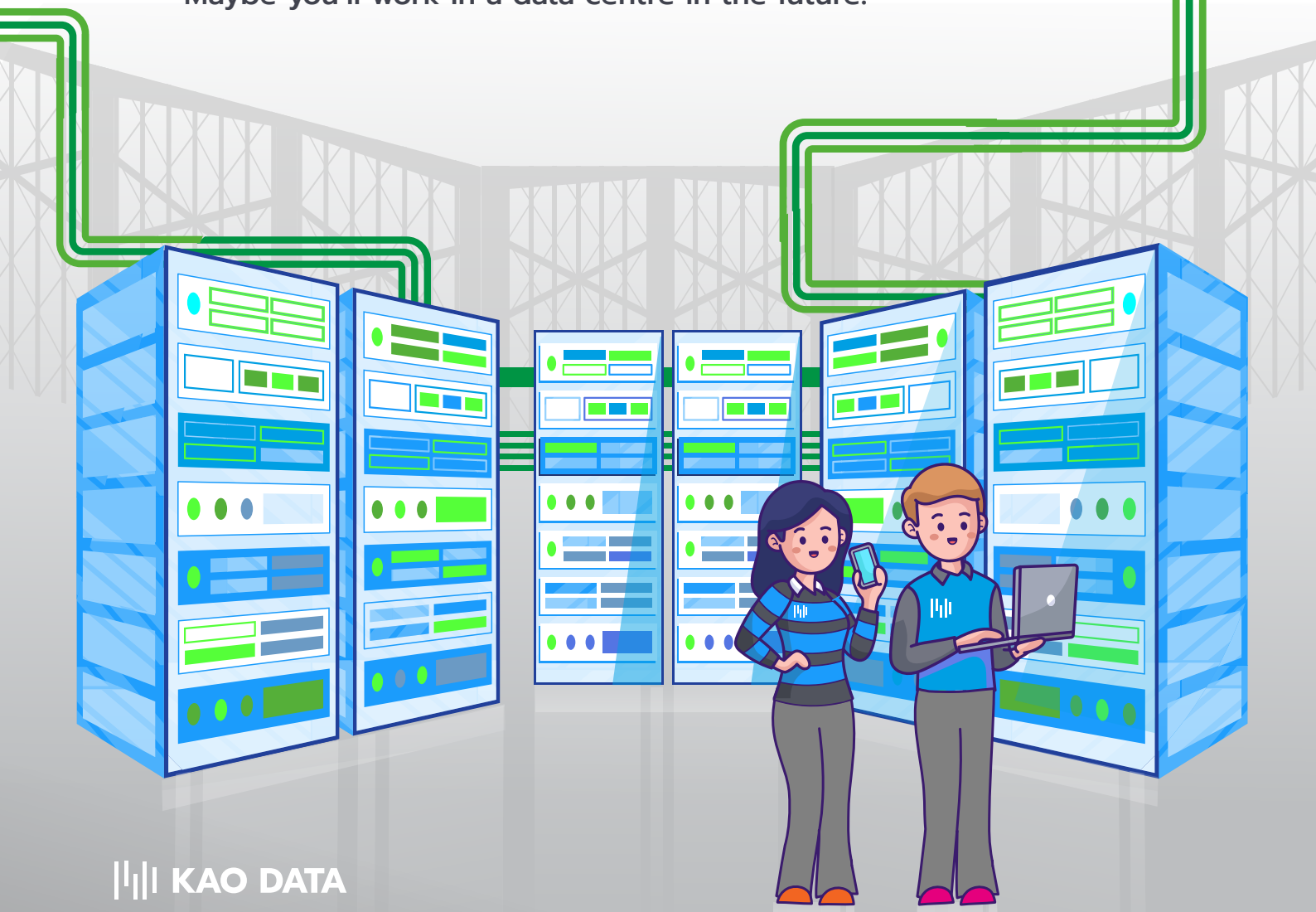
Why are data centres important?

The world we live in today is increasingly reliant on data - with computers and digital devices all around us - at school, work and play.

Data centres store and process all the data in the world. In the future we will need data centres even more when cars become driver-less and artificial intelligence (AI) supports more of the things we do.

Data centres need clever people to design, build and run them. Maybe you'll work in a data centre in the future!



Word search

Find the words below – they're all really important in the world of data centres!

- Server
- Power
- Generator
- Secure
- Internet
- Renewable
- Clean
- Computer
- Network
- Campus
- KaoData
- Datacentre

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

AMAZING FACTS

Here are 5 mind-boggling facts about data and data centres to wow your family and friends!

- If you put all the data created in one day onto DVDs, you could stack all those DVDs on top of each other and **reach the moon - twice!**
- It would take **over 180 million years** to download all of the data on the Internet!
- Data centres can be found in some **very strange places** - under the sea, on Antarctica, in deserts, underground, on ships and even in space!

- Kao Data's campus in Harlow is on the same site where **Sir Charles Kao invented the fibre optic cable in 1966**. Without this amazing technology we wouldn't have the **Internet!**
- The UK's fastest and most powerful supercomputer is in **Kao Data's data centre in Harlow**. It's called Cambridge-1.

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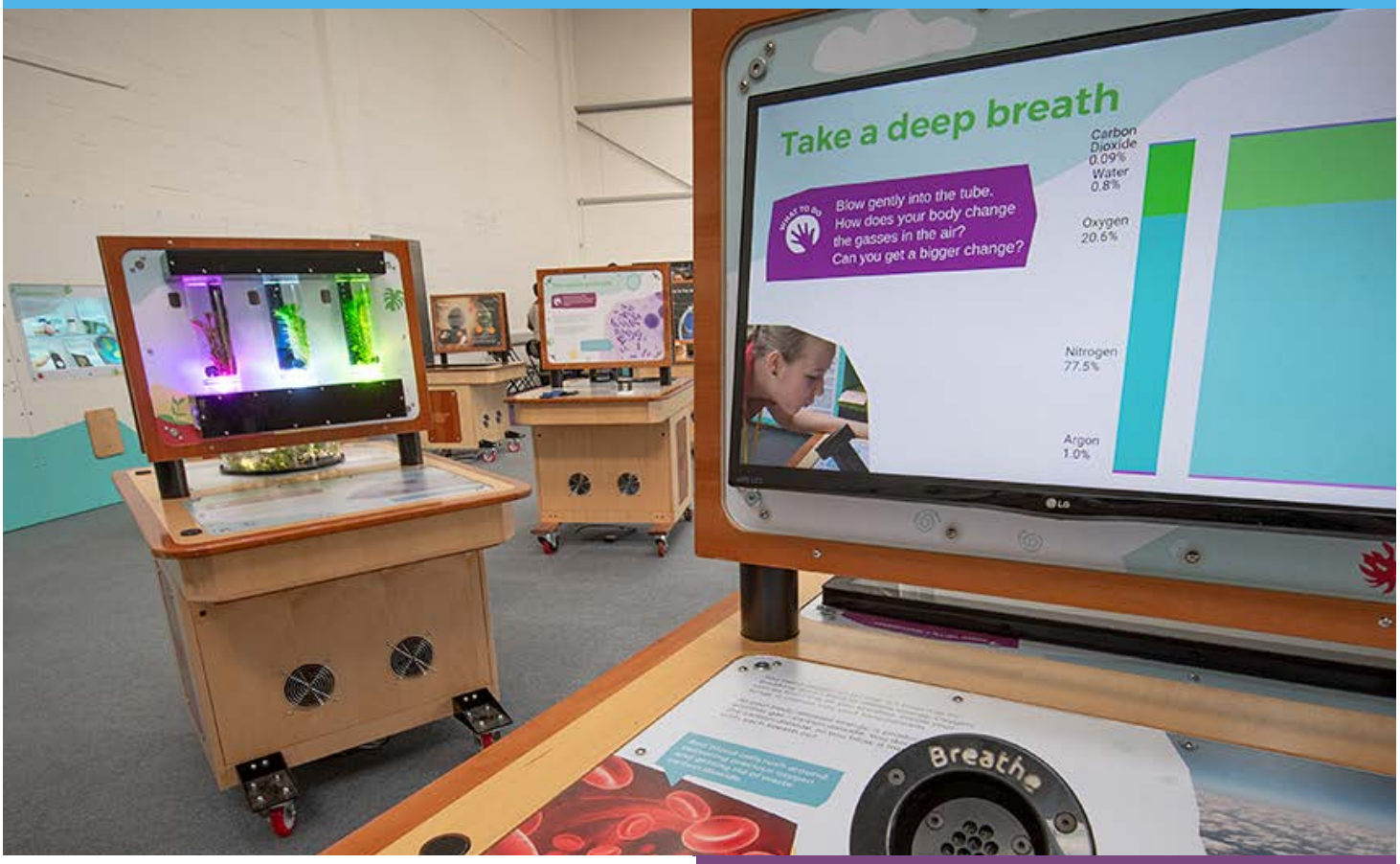
SPARK, IGNITE, FUEL, ILLUMINATE



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SUPPORTED BY KAO DATA AND OUR EXECUTIVE COUNCIL MEMBERS

FIND US

For more information, please visit our website

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Call us on 01223 967965

info@cambridgesciencecentre.org

Find us at 44 Clifton Road
Cambridge
CB1 7ED
Parking available on site.

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Find out more about data centres and the role they play in our daily lives by visiting
www.kaodata.com/kaoacademy

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