

Missions

Six things to make and do, plus warm-ups, games and puzzles

THIS BOOK BELONGS TO

Colour a badge in each time you finish a mission



The Sock Walk
Sheets 12–15



My Museum
Sheets 16–20



The Post Office
Sheets 21–25



The Tallest Tower
Sheets 26–29



The Sound Map
Sheets 30–33



A Whole Day
Sheets 34–36

This book is meant to be slow. One page is a whole session. A mission can take a fortnight, and stopping in the middle of one is completely fine — every mission page says where to pick it back up.

Volume 1 was practice. This one is projects. The ten warm-ups revisit Grade 1 skills with one new twist each. The six missions are real things to make and do away from the table, and each quietly covers several strands at once. Nothing here needs anything you would have to buy.



A new secret picture

Work out each answer. Find the colour in the key. Colour that square in.

7 work it out

colour

 The key

5 = red

6 = blue

7 = yellow

8 = green

9 = orange

10 = purple

$3+2$	$4+2$	$2+5$	$4+4$	$6+3$
$5+5$	$4+3$	$3+3$	$5+4$	$2+3$
$6+2$	$1+4$	$4+5$	$5+3$	$2+4$
$3+4$	$7+3$	$5+2$	$6+4$	$4+1$
$2+6$	$6+1$	$3+5$	$1+8$	$5+1$

For the grown-up. If she is not ready to add yet, she can count on her fingers from the bigger number. That is a real strategy, not cheating.



How many, without counting?

Look for one second, then say how many. Do not count them one at a time.

look

say it

write

✓ The trick

Your eyes can just see small amounts without counting. Most people can do it up to about five. After that you look for groups you already know.

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For the grown-up. Ask how she knew. “I saw two and two” is a better answer than the right number. That noticing is what this page is for.



Number line hops

Start at the dot. Hop the number of times it says. Where do you land?

7 count on

write

Start at 0. Hop 4 lots of 5.



I land on

Start at 10. Hop 3 lots of 10.



I land on

Start at 20. Hop 5 lots of 2.



I land on

Start at 15. Hop 4 lots of 5.



I land on

For the grown-up. Hopping in fives and tens on a marked line is the bridge to skip counting. Let her put a finger on the



The solid shape hunt

These are solid shapes — the fat kind you can hold. Go and find one of each in your house.

 hunt draw write☐ **cube**

6 flat square faces, like a dice

draw what you found

☐ **sphere**

round all over, like a ball

draw what you found

☐ **cylinder**

two flat circles and a curved side, like a tin

draw what you found

☐ **cone**

one circle and a point, like a party hat

draw what you found

For the grown-up. The word is **faces** for the flat bits. Ask her to run a finger round one. Rolling them is the best test: spheres roll every way, cylinders only one way, cubes not at all.



Sounds you can stretch

Some sounds you can hold on for ages. Others pop and stop straight away. Try each one.

- say it
- tick
- talk

✓ Try these two

Say ssssssss — you can keep going until you run out of air. Now say t. It pops once and it is gone. You cannot stretch a t.

sound	I can stretch it	it pops
s		
t		
m		
p		
f		
k		
n		
b		
l		
d		
sh		
g		

For the grown-up. Stretchy sounds are much easier to blend when reading. If she can hold **mmmm** and **aaaa** she can slide them together into *ma*. Popping sounds need a quicker join.



Tricky word bingo

These words do not sound out. Find each one in a real book, then colour its square.

 hunt colour write

said

was

the

you

they

one

come

some

there

have

two

who

Which book did you use?

For the grown-up. Hunting them in a real book beats a flashcard, because she meets the word doing its actual job. Any book counts, including one you are reading to her.



Patterns that grow

A repeating pattern says the same thing again and again. A growing pattern gets bigger each time.

7 count

draw next

✓ Spot the difference

Repeating: ●▲●▲●▲ — the same two, over and over.

Growing: ● ● ● ● ● ● ● — one more every time.

Pattern A



is it repeating or growing?

Draw what comes next

Pattern B



is it repeating or growing?

Draw what comes next

Pattern C



is it repeating or growing?

Draw what comes next



Which pile is more?

Guess first. Write your guess. Then count and see how close you were.

guess

7

 count

write

pile	my guess	the real number	close?
a handful of dry pasta			
the buttons on your coat			
forks in the drawer			
books on one shelf			
steps up to somewhere			
socks in one drawer			

Which guess was your best one?

For the grown-up. A guess that is close is a win. Estimating well comes from having counted a lot of things before, so the two halves of this page belong together.



Measure with your own feet

Put one foot right in front of the other, heel to toe, and count as you go.

- measure
- count
- write

✓ **The rule**
No gaps and no overlaps. Your heel has to touch your toe every time, or the number comes out wrong.

from here to here	my feet	a grown-up's feet
across your bedroom		
along the hall		
across the kitchen		
round your bed		

Why did the grown-up need fewer feet?

For the grown-up. This is the whole reason standard units exist, and she can discover it herself here. Bigger unit, smaller number — that idea comes back every year.



Sort it three ways

Find about twelve small things. Sort them. Then mix them up and sort them a different way.

 sort draw write

Sorting one

my
rule
was

things that fit the rule

things that do not

Sorting two

my
rule
was

things that fit the rule

things that do not

Sorting three

my
rule
was

things that fit the rule

things that do not

For the grown-up. Three different rules on the same objects is the point. It shows that a sorting rule is a choice she makes, not something the objects have.



MISSION ONE

The Sock Walk

Wear a sock over your shoe, walk through long grass, then grow whatever came home with you.

Here is the whole mission. You do not have to start today.

Step 1

Put a big old sock over one shoe and go for a walk through long grass

Step 2

Look at what stuck to it, and draw four of them really big

Step 3

Plant the whole sock in a tray of soil and water it

Step 4

Watch it for three weeks and measure what grows

One step is a whole session. Tick each step when it is done. You can stop between any two steps and come back another day.

For the grown-up. You need one adult sock you do not mind losing, somewhere with long grass or weeds, a shallow tray, and some soil or compost. Late summer and autumn work far better than spring. Step 4 is deliberately slow — three weeks of two-minute visits.



Go for the walk

Pull the sock right over your shoe. Now walk where the grass is long and scruffy.

🚶 go outside

👁 look closely

✍ draw

✓ Why this works

Seeds cannot walk. Some of them have tiny hooks so they can catch on an animal going past, and get a free ride to somewhere new. Today you are the animal.

Where did you walk?

Pick four things that stuck. Draw each one much bigger than it really is.

number 1

number 2

number 3

number 4

How many things stuck altogether?

For the grown-up. A magnifying glass makes this ten times better if you have one. The hooks are visible to the naked eye on burdock and cleavers, and she will not forget seeing them.



Plant the sock

Do not pick the seeds off. Plant the whole sock, exactly as it is.



plant it



water it



write

Put soil in a shallow tray, about as deep as your finger is long

Lay the sock flat on top and press it down gently

Sprinkle a thin layer of soil over the sock

Water it until the soil is damp but not swimming

Put it somewhere light. A windowsill is perfect.

What day did you plant it?

Where did you put it?

 What a seed needs

water

light

warmth

soil

time

For the grown-up. Damp, not soaked — a waterlogged tray goes mouldy instead of green. A clear bag over the top holds the moisture in and speeds things up.



Watch it grow

Look at your tray once a week. Draw exactly what you can see, even if it is nothing yet.

 look draw measure

Week 1



how many shoots?

Week 2



how many shoots?

Week 3



how many shoots?

The tallest one

Measure it with cubes, or with your little finger.

week 1	week 2	week 3

Were all the shoots the same?

For the grown-up. Different shoots means different seeds, which is the finding. If nothing comes up, that is a real result too — sock walks in spring often fail because the seeds have not set yet.



MISSION TWO

My Museum

Collect a pile of small things, sort them, label them, and open a museum for one afternoon.

Here is the whole mission. You do not have to start today.

Step 1

Collect twelve small things from around the house

Step 2

Sort them one way, then a completely different way

Step 3

Write a label for your six best ones

Step 4

Set it out and give somebody a tour

One step is a whole session. Tick each step when it is done. You can stop between any two steps and come back another day.

For the grown-up. Nothing precious, nothing alive, nothing sharp. Twelve is enough — more becomes unmanageable. A tea tray or a towel makes a good museum floor. The tour at the end is the bit that matters most.



Go collecting

Find twelve small things. They must fit in one hand and belong to nobody in particular.

 collect

 draw

 write

 Ideas, if you get stuck

a button

a leaf

a pebble

a coin

a shell

a key

a bead

a feather

a cork

a lego brick

Draw each thing in a box and write its name if you can.

For the grown-up. Let her choose. A museum of twelve pebbles is a perfectly good museum, and arguing about the collection wastes the energy she needs for the sorting.



Sort it, then sort it again

Put your things into groups. Then mix them all up and find a totally different way.



sort



write



explain



Some rules you could use

what it is made of · what colour it is · whether it was ever alive · whether it floats · how heavy it is · whether it is shiny

Sorting one

my rule _____

how many fit the rule	how many do not

Sorting two

my rule _____

how many fit the rule	how many do not

Was anything hard to put in either group?

For the grown-up. The awkward object is the most interesting part. Something that is half wooden and half metal shows that sorting rules have edges, and that is a genuinely advanced idea.



Write the labels

Museums put a little card next to everything. Write six.

 write

 draw

✓ What goes on a label

What it is — then where it came from — then one interesting thing. Three short lines is plenty.

Grey pebble. From the beach at the lake. It has a white stripe all the way round.

For the grown-up. Cut these out at the end, or copy them onto folded card so they stand up. Standing labels make it feel like a real museum, which matters more than the handwriting.



Open the museum

Lay everything out with its label. Then take somebody round and tell them about it.

 set it out

 give a tour

 write

Draw a plan of your museum

Where will each group go? Draw it from above, like a map.

Who came?

What did they ask about?

Mission two is finished. Go and colour in the second badge on the front of the book.

For the grown-up. Being the expert in the room is the whole reward here. Ask real questions and let her answer at length, even the rambling bits.



MISSION THREE

The Post Office

Make a postbox and some stamps, write real letters, then sort the post and deliver it.

Here is the whole mission. You do not have to start today.

Step 1

Make a postbox out of a box, and draw a sheet of stamps

Step 2

Write three letters to three different people

Step 3

Sort the post into piles before it goes out

Step 4

Deliver it, and count what you delivered

One step is a whole session. Tick each step when it is done. You can stop between any two steps and come back another day.

For the grown-up. A cereal box with a slot cut in it is a perfect postbox. One of the three letters is to herself, to be opened in a month — put a reminder in your phone, because that one is the best bit.



Make the post office

Every post office needs a box to post things into, and stamps to stick on.



make it



draw



cut out

Find an empty box with a lid or a flap

Ask a grown-up to cut a slot in the top, wide enough for a folded letter

Colour it in and write POST on the front

Put it somewhere everybody walks past

Now design your stamps. Six different ones. Make them small.

How much does one of your stamps cost?

For the grown-up. Perforated edges are a nice touch if she wants them — a line of dots down each side. Real stamps have a monarch or a bird on; hers can have anything.



Write the letters

Three letters. One stays in the house, one goes far away, and one is for you to open later.

 write

 draw

✓ What goes in a letter

Start with Dear and their name. Say one thing that happened. Ask them one question. Finish with From and your name.

Letter 1 · somebody in this house

They have to find it in the postbox themselves.

Dear

Letter 2 · somebody far away

A grandparent, a cousin, an old friend. This one gets a real stamp.

Dear

Letter 3 · yourself, in a month

Tell yourself what you are doing today. Seal it and hide it.

Dear



Sort the post

Real post offices sort everything before it goes out. Sort yours too.



sort



count



write



How the sorting works

Post that stays nearby goes in one pile. Post that has to travel a long way goes in another. That is how a real sorting office starts.

stays in this house



how many

goes into town



how many

goes a long way



how many

How many letters altogether?

and how did you work it out?

For the grown-up. If she counts the three piles and adds them, that is exactly the skill. Ask her to check by counting the whole lot a second way.



Deliver it

Put the post in the box. Then be the postie and take it round.

- ✎ deliver
- ✍ write
- 💬 talk

Draw your delivery round

Where did you have to go? Draw the route with arrows.

letter	who got it	what did they say?
1		
2		
3		

Mission three is finished. Colour in the third badge. Do not forget the letter you hid.

For the grown-up. Posties, sorters, drivers and pilots all touch one letter before it arrives. Worth mentioning — community helpers make far more sense attached to something she has just done.



MISSION FOUR

The Tallest Tower

Build the tallest tower you can that still stands up on its own — then make it hold a teddy.

Here is the whole mission. You do not have to start today.

Step 1

Gather your building things and build the tallest tower you can

Step 2

Measure it, draw it, and work out where it was weakest

Step 3

Build a second one that fixes the problem

Step 4

Test it: can it hold a small teddy without falling?

One step is a whole session. Tick each step when it is done. You can stop between any two steps and come back another day.

For the grown-up. Anything stackable works: blocks, boxes, cushions, books, cups. The failures are the useful part, so let it fall over several times before helping. A small soft toy is the fairest test weight.



Build the first one

Build as tall as you can. It has to stand on its own with nobody holding it.

- build
- measure
- draw

Things that stack

- blocks
- boxes
- books
- cups
- tins
- cushions
- lego
- shoe boxes

Draw your tower

How tall?

measured in	how many
bricks or blocks	
hand spans	
is it taller than you?	

How many pieces did you use?

For the grown-up. Resist the urge to steady it. A tower that falls over teaches more in three seconds than any amount of advice, and the next one will have a wider base.



Where did it go wrong?

Every tower has a weak spot. Find yours, then build a better one.

 look

 write

 rebuild

✓ **Three things that help a tower**

A wide bottom. The heavy things low down. Every layer flat before you add the next one.

Where did it wobble first?

What will you change?

☐

wider bottom

☐

heavy things lower

☐

flatter layers

☐

fewer pieces

☐

bigger pieces

Tower one

blocks tall

Tower two

blocks tall

For the grown-up. Changing one thing at a time is a fair test. If she changes everything at once she will not know which change worked, and that is worth saying out loud.



The teddy test

A tall tower is one thing. A tower that holds something up is much harder.

 test it

 count

 write

✓ The rules of the test

Put the teddy on top very gently. Count slowly to five. If it is still standing, it passed.

try	what I changed	did it hold?
1		
2		
3		

Draw the one that worked

Why did that one hold?

Mission four is finished. Colour in the fourth badge.

For the grown-up. Three tries is the minimum for it to feel like testing rather than luck. If all three hold, get a heavier teddy.



MISSION FIVE

The Sound Map

Sit completely still, listen for three minutes, and draw a map of everything you can hear.

Here is the whole mission. You do not have to start today.

Step 1

Find a spot, sit still, and draw every sound where it came from

Step 2

Do it again somewhere completely different

Step 3

Compare your two maps and see what changed

One step is a whole session. Tick each step when it is done. You can stop between any two steps and come back another day.

For the grown-up. This one is quiet and it works best that way. Three minutes of sitting still is longer than it sounds — set a gentle timer rather than counting. Indoors on a rainy day is just as good as a park.



Sit still and listen

Put an X in the middle for you. Every sound you hear, draw a tiny picture of it where it came from.

listen

draw

write

How to do it

Sit down. Shut your eyes for a moment. A bird behind you goes behind the X. A car on your left goes on the left. Close sounds go near the X, far ones go near the edge.

in front of me

my left



my right

behind me

Where were you?

How many sounds altogether?

For the grown-up. She will hear more in the third minute than the first. If she says there is nothing to hear, wait — that is usually the moment the fridge, the traffic and her own breathing arrive.



Somewhere completely different

Now do exactly the same thing, but somewhere else. Inside if you were outside.

 listen

 draw

 write

in front of me

my left



my right

behind me

Where were you?

How many sounds altogether?

For the grown-up. Somewhere she would not normally sit still is best — a stairwell, a bus stop, a shed. Familiar places sound completely different once you stop moving.



Compare your two maps

Put the two maps side by side. What was different?

- compare
- write
- talk

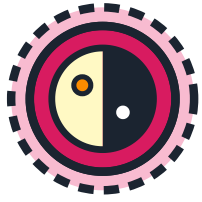
	the first place	the second place
how many sounds		
the loudest one		
the quietest one		
how many were living things		
how many were machines		
which place was calmer		

Which sound surprised you most?

Which place would you rather sit in for a long time? Why?

Mission five is finished. Colour in the fifth badge.

For the grown-up. Living sounds versus machine sounds is a real sorting rule and it is quietly a science idea. The last question is worth taking seriously — knowing which places suit you is a useful thing to know.



MISSION SIX

A Whole Day

Pick a creature, find out what it does all day, and turn its day into a six-picture story.

Here is the whole mission. You do not have to start today.

Step 1

Choose your creature and find out three things about it

Step 2

Work out what it does at six different times of day

Step 3

Draw the whole day as six pictures, and read it out loud

One step is a whole session. Tick each step when it is done. You can stop between any two steps and come back another day.

For the grown-up. A pet is easiest, but a garden bird, a snail, a woodlouse or a fox all work. If it is a wild animal she cannot follow all day, finding out counts as much as watching.



Choose your creature

Pick one animal. It can be a pet, or something wild you can watch, or one you find out about.

 watch

 write

 draw

My creature is

Draw it

Three things I found out

How did you find out?

watched it

asked somebody

a book

a screen

Every animal needs these

food

water

air

somewhere to live

Where does yours get each one?

For the grown-up. If she picks something you cannot watch, a snail from the garden in a jar for one afternoon is a fine substitute, and it goes straight back afterwards.



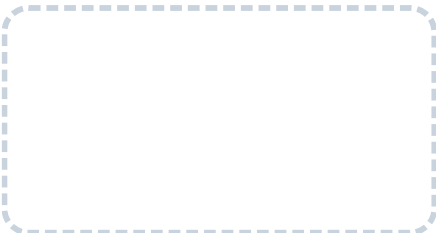
Six pictures, one day

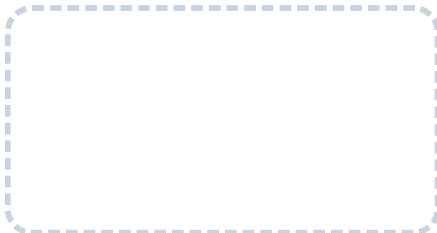
Draw your creature's whole day, from waking up to going to sleep. Write a few words under each one.

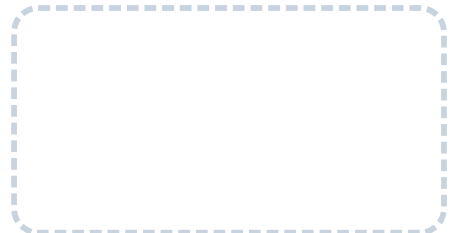
 draw write read it out**first thing**

morning

the middle of the day

afternoon

evening

night

Which part of its day is most different from yours?

That is all six missions. Colour in the last badge on the front of the book.

For the grown-up. Reading the six pictures aloud in order is the whole point of the page — it is a story with a beginning, a middle and an end, and she wrote it.



Three games to play

These all need one other person and nothing else at all.

play

count

move

1 • Guess My Rule

One person puts things into two groups without saying why. The other person has to work out the rule. Then swap.

Start easy — big and small. Get sneakier — things with holes in, things that begin with the same sound. The best rules are the ones that take three guesses.

2 • Shape I Spy

Instead of a letter, use a shape. *I spy something with four corners. I spy something round all the way over.*

Harder version: give two clues at once. *I spy something round and made of metal.*

3 • Beat the Grown-Up

Both of you hold up some fingers at the same time. Whoever says the total first wins the point. Play to five points.

The grown-up has to say it out loud too, and is allowed to be slow. Losing on purpose is fine at the start and stops being needed surprisingly quickly.

✓ Keep score if you want to

game	me	them
Guess My Rule		
Shape I Spy		
Beat the Grown-Up		

For the grown-up. None of these have a timer and none of them can be lost badly. Guess My Rule is the one worth keeping — it is sorting, and it never runs out.



Work it out

These take a bit longer than they look. Read each one twice.

 think

 write

1 • The three hats

Ali, Bea and Cam each have a hat. One red, one blue, one green.
Ali's hat is not red. Bea's hat is green.
What colour is each hat?

Ali	Bea	Cam

2 • The line

Five children are waiting in a line.
Sam is at the front. Priya is last. Jo is right behind Sam.
How many children are between Jo and Priya?

answer

3 • The biscuits

There were 10 biscuits on a plate.
You ate 3. Your sister ate 2. Then a grown-up put 4 more on.
How many are on the plate now?

answer

4 • What am I?

I have four sides. All four are the same length. I have four corners and they are all square corners.

I am a

For the grown-up. Number two catches almost everybody, because you have to notice that the middle child is never named. Reading it twice is genuinely the trick.



Word benders and number benders

Some of these have more than one right answer. That is allowed.

 write

 count

Rhyme chains

Write three words that rhyme with each one.

cat _____

light _____

sing _____

door _____

Hidden words

A small word is hiding inside each big one. Circle it.

grand window carpet

friend started another

Missing numbers

$$5 + \square = 12$$

$$\square + 6 = 14$$

$$20 - \square = 13$$

$$\square - 4 = 9$$

$$7 + 7 = \square$$

Make fifteen

Use two of these numbers each time. You can use a number more than once.

3

5

6

7

8

9

10

12

$$\square + \square = 15$$

$$\square + \square = 15$$

$$\square + \square = 15$$

For the grown-up. Make Fifteen has several answers and finding a second one is harder than finding the first. Hidden words: gran, wind, car, end, art, other — among others.



You got to the end

Six missions, ten warm-ups, three games and a pile of puzzles.

Which mission was your favourite?

The Sock Walk

My Museum

The Post Office

The Tallest Tower

The Sound Map

A Whole Day

Why that one?

Something you can do now that you could not do at the start

A mission you would invent yourself

✓ Answers, for the pages that have them

Hats: Ali blue, Bea green,

Missing numbers: 7, 8, 7, 13, 14. Make

Everything else in this book is

Sheet Cam red. The line: one

Sheet fifteen: 5+10, 3+12, 6+9, 7+8 all work.

meant to come out differently for

38. child. Biscuits: nine. What
am I: a square.

39. Hidden words include gran, wind, car,
end, art and other.

everybody, so there is nothing to
check it against.

What now? Every mission in here can be done again and come out completely different. A sock walk in a different month grows different plants. A sound map in the same spot at night is a different map. Doing one twice is not going backwards.