# Search sheets: how to run the activity

LLMs Unplugged

The pages after this one are 36 **search sheets**, dealt from *The Cat in the Hat* by Dr Seuss. Print them one-sided and hand out **one sheet per person**; every sheet is different, and nothing needs cutting out. Each holds 54–55 **token pairs**: a **next token** with the **previous token** that came before it in the text.

**Match the room to the sheets**, not the other way round. More people than sheets: print the whole set again, once per extra roomful. Every count multiplies equally, so the proportions — which is all the model is — hold. Fewer: hand the spares out anyway, two or three to a person. A sheet nobody holds is a hole in the model.

In in the, the boxed token is the context and *the* is the next token. A token keeps its colour wherever it appears, so say the colour as you call one out — "who has *the*? it's a purple one" — and the room can scan by colour before reading. With 8 colours and far more tokens, a colour narrows the search rather than settling it.

black grey red brown green blue purple magenta

## Running a round

Seed the board: someone reads out any token pair from their sheet, boxed token first, and both go up — the room supplies the beginning too. Then, each round:

1. **Call out the last token** on the board.
2. **Hands up** from everyone holding a matching token pair — one hand each.
3. **Pick a raised hand at random** — whoever shouts first is the fastest reader, not a sample of the text — and ask for its next token.
4. The scribe writes that token up. It is part of the next context. Repeat.

## What to watch for

**The hands are the probability distribution.** Every token pair sits with exactly one person, so a common continuation puts more hands in the air than a rare one. Nobody has to explain weighted sampling; the room performs it.

**Nobody holds the model.** No single sheet can continue the text on its own. One hand is not a stall — but no hands at all means an empty seat, so reseed from any token pair and say why.

1962 tokens, 240 unique · 2.83 bits/token · perplexity 7.1 · branching factor 4.32

## Worked example

| | *the token pair that answers* | *on the board* |
|---|---|---|
| **Start anywhere.** Someone reads out a token pair — say this one — and both its tokens go on the board. | in the | in the |
| **Round 1.** Call out *the* — the last token on the board. A sheet across the room matches it, and that person reads out *way*. | the way | in the way |
| **Round 2.** Call out *way* — the last token on the board. A sheet across the room matches it, and that person reads out *that*. | way that | in the way that |

Keep going for as long as you like. What the room writes will sound like *The Cat in the Hat* without ever repeating it — that is the model generating, not the corpus being read out.

| | | | |
|---|---|---|---|
| in the | game that | fish ! | said , |
| things , | Why do | what should | . so |
| kites on | tell me | like , | did not |
| the cup | is not | can do | so , |
| a lot | fly kites | find this | I will |
| the head | tip of | cat said | you some |
| fan ! | us this | , so | ! so |
| have to | do not | should not | ! look |
| wet , | had to | saw her | with Thing |
| and then | bump on | . no | I do |
| he has | we tell | that is | hat . |
| the dish | . these | then we | and I |
| to go | ! then | not all | , the |
| will not | on the | . what | |

find us
did you
Why ,
not mind
! and
and so
day .
and I
so ,
, wet
said ,
hands with
a pot
, I
! said
is not
shame !
wet to
kites ,
I call
. and
. have
with the
then I
can have
game that
I do
. that
we do
have Lots
. not
tip of
to you
the way
will show
saw them
you do
the ball
mess ,
on a
fish in
like to
he said
fan as
do as
in the
! said
that is
the fish
milk on
him !
what would
sad kind
about it
things will

| | | | |
|---|---|---|---|
| then we | him step | mat ! | fan , |
| put them | . he | what to | house and |
| ? Oh | you can | call up | on the |
| I said | deep and | wet day | the milk |
| ! and | can hold | to us | . your |
| and the | have any | ! Thump | hop up |
| with my | things and | ! Who | , white |
| said the | saw him | is a | the fish |
| the cup | mess is | , what | a cake |
| and Thing | I know | we had | . . |
| he put | like it | hands . | milk and |
| not all | will not | . your | about with |
| that are | day . | shame ! | fish , |
| so tame | bad tricks | do something | |

what will
him pick
! said
is not

the books
. and
fish !
. we

house .
call them
with a
, I

milk ,
said the
want to
toy ship

so so
put me
shook their
hands with

you ?
will see
! look
fan with

bad ,
day .
wet ,
like these

can hold
? Well
shame !
mess !

I will
! so
on a
he said

we saw
and Sally
do !
about .

not a
that is
then ,
. he

the cat
saw him
to us
and I

things I
. you
hop on
, I

I will
the cat
deep in

! what | things fall | our fish | get them

gown with | fish . | then Sally | . that

wet and | house ! | lit . | ! and

the hat | toy man | not know | to find

want to | day ? | I can | some good

we did | he fell | on there | that bump

would you | what to | and so | . do

put them | so all | do ? | I say

! now | good fun | will like | saw one

the hat | Think of | , said | call this

can hold | said the | here . | like it

with a | the cake | shook up | , with

you should | ? Why | and big | are pink

. two | is not | . Yes

. .
our fish
! and
good ,

on his
house !
and we
. Thing

do not
shook with
saw him
get out

what a
the toy
a ball
can hold

things they
some fun
are two
there like

fish in
not sunny
the cat
he gave

so .
? tell
toy ship
! I

. so
will show
. you
From up

and Sally
to us
would she
, no

I do
, said
put me
I wish

you hear
like to
said to
yet !

then Sally
gown !
that .
we looked

the house
kind of
wet day
! bump

here When
with a
at me

| | | | |
|---|---|---|---|
| Sally . | pick up | that is | ! and |
| , and | here When | so we | you sank |
| their two | things yet | like it | hops and |
| are good | good games | not all | . But |
| what the | , we | said the | get those |
| then I | fish as | ! sit | toy ship |
| house ? | our toy | not be | Lots of |
| to shake | the hall | we saw | . I |
| ? and | a cup | he said | some new |
| . our | on a | and Thing | ! he |
| . then | I like | there with | would you |
| the hat | at all | gown , | now you |
| bit ! | put them | can hold | I said |
| and down | will not | the cat | |

| | | | |
|---|---|---|---|
| has gone | then those | here is | things in |
| and Thing | he came | I will | a cup |
| Lots of | there , | we saw | so big |
| will she | be in | at this | not all |
| I will | . and | . I | ! then |
| can hold | that is | ! we | they will |
| their kites | bit ! | on the | our mother |
| said the | not like | ! you | some milk |
| are tame | fish said | pick up | and this |
| ? I | like that | good tricks | what did |
| now look | you wish | . . | , and |
| the cat | of her | get rid | the hat |
| house ! | to be | , how | bite you |
| . . | Sally and | the cat | |

tail I
that is
good trick
he was
gave them
things that
like to
dish !
of the
be here
and the
can get
! then
and the
PLOP !
now !
what to
on the
not like
, wet
here to
they will
we had
. we
? what
at all
! said
then ,
not be
house !
a bow
are not
our mother
to get
there that
you up
could see
the cat
the cake
said the
fish said
pick it
I can
I will
. I
so .
. my
, too
. what
Sally and
will hit
For the
bit .
! those
the fish

, said
he lit
to fall
into a
hear !
! the
a pat
, not
! and
and the
our fish
fish .
. and
were down
pick up
dish ,
things .
I will
not shine
could ,
Sally and
there on
the fan
be here
here .
at me
on my
the cat
they play
? should
so we
will have
how do
fast as
now !
house !
. But
that were
of this
. .
cold to
I do
not .
the rake
said the
pack up
can fan
! Oh
like this
what you
good game
. he
we saw
then our
you pack

we can a look fast as of this

in the can get will show . .

be here kicks and not fly books !

hear ? ! I on the there is

and I , then things . I can

could do our fish kinds of give you

, out that I cold , . .

fish shook you sit ! I not in

. what string of house all how that

what will I hop the fish the hook

? Oh good things said , to do

then he now ! here When he got

. she at that Sally and like the

the hat ! look they like

said to
can hop
. he
be here
, she
things ran
? now
could play
in the
man !
the dots
what would
house For
not be
how I
on the
at me
will not
he shut
to know
a rake
then something
! so
and all
! if
Sally and
I ,
playthings and
now ,
books ,
like it
up and
of good
the house
mother's new
! they
. and
. we
our house
fish .
. .
we saw
net .
cold ,
fast .
, what
you like
that I
lot of
I can
show you
cat go
the cat
they like
good fun

I call show to I can box ,

like our one and the day our new

a book , so ! said to the

you another trick that can have wood box

! her now look net . in with

! put on the , we . I

cat in lot ! fish in what a

of something . and . then

they are pat . two things . these

good game things they said to not want

we saw how . will give the ball

strings , books ! at all be here

and the then he fast as that day

and Thing ? would up these the pot

, Why . this . and to say

the fish then he trick , fast !

out of we sat net , last !

will not looked ! they should the house

Thing one and so Oh , two books

! do I can fish said pot !

tricks . one little the box cat in

said the . Oh in the , the

a tip our mother and kicks now ,

at last ! and be about box are

I do you have ! said that is

up the , said show them not be

what a play . things that little toy

. it ? Oh of good

no fear . so I said show you

up on box . you do we can

. I pot . will come the hat

then he the fish two things Oh ,

that they out and little fish not one

Thing two . a the things and a

looked ! now . one and ! at

, with said the of look in the

, do and look net I funny !

sat in , said they should cat in

came down our fish at me ! those

hall . ! put sun did a box

fish came play ! tricks . to the

. this I can ? and

of his
Oh dear
and red
. .
our fish
box with
in the
. have
little bit
! how
! then
two ,
them go
! then
not wish
one and
. they
cat .
said the
play ,
pot .
, here
tricks ,
no ,
Thing two
bow .
and I
hall .
out !
take them
will bump
the ship
we sat
then our
now look
came in
sun is
you get
they will
, no
up those
look at
fish .
I can
if your
book on
at this
the cake
the mat
. I
I let
a bump
, and
to go
sat there

, I not . . that our game

look ! if you to do and the

in the and you take a fall .

When your of Thing , what will find

we sat they want play ball ! said

the wall the cat little bit two .

now ! . with the sun at all

this mess said , came down , the

a lot them a no fear I do

out ! ! have home ! I saw

box . ! I Oh , one hand

up up pot . . I sat there

Thing one his hat cat in tricks are

you will fish on . there

up high
at me
! they
cat .

When our
in a
the milk
came down

, how
of one
hand !
the hook

and the
. it
. I
box came

to do
, look
sat in
no fun

you now
we looked
Oh ,
the cat

run down
I call
fish to
play .

do not
they ran
look at
asked you

one !
his hat
I always
said the

fear .
them out
, jumps
. you

out of
fall !
Thing one
if I

not pick
! then
little bit
a big

pot .
! said
bed !
two things

and a
this mess

Thing one new tricks at this a little

came Thing this game Well . we tell

the cat , now out ! not know

. . When your said the cat .

, I and Thing his head , said

and I I had fall ! look at

no fear ! I fear ! ! now

. and . no little toy ! he

Make that one ! up . the cat

with Thing you do of the do ?

Oh , tame . to the thumps and

them out the wall shake hands in the

I can play . they have those things

if mother two things

cat .
said ,
out of
a tip
! put
. in
came back
tame !
those things
! and
I bet
went on
cake !
I know
Make them
Oh ,
another good
it was
they ran
new .
up all
fear !
shake hands
Thing one
know how
no fear
, said
the house
and Thing
fell on
. I
wall !
with a
not be
do .
. they
look at
this way
and they
the hat
! and
of my
in the
, and
them I
one little
two and
is what
the cat
was gone
mind at
you did
say .
we saw

! they , that sank it Oh ,

my tricks cat with Thing two . I

the things was out say . and you

they should two ! the fish . .

the fish , said up all a fish

with big is not fear , sit !

said the of his I stand went away

look ! bet . ! have ! sit

I did new rake another good

one little and the it , this house

those things know what out . not know

you . fell into we could do not

them Thing wall in in the cake .

said our . you no !

one kite
no fear
do not
the things

Oh ,
they said
all the
new gown

I sat
my tail
. I
look what

them to
the hat
sank our
not one

. .
fear of
said the
! bump

the pot
come here
, and
and the

is not
, said
! it
went bump

was to
her the
two ?
and our

up the
wish we
with hops
say .

sit !
. and
cake ,
know !

I like
cat ,
of good
those two

it deep
bet ,
in the
Thing two

said the
this trick
! not
down on

mother was
a box

| | | | |
|---|---|---|---|
| was too | . your | . should | come . |
| those two | ! what | sit ! | say ? |
| step in | ! and | is not | up there |
| cat . | wish to | and he | I know |
| the cat | down the | me ! | them away |
| bumps , | one kite | I went | , sank |
| a red | two things | do . | as I |
| cake on | mother could | | look ! |
| with a | said , | , as | ! your |
| the cat | fear . | not let | of bad |
| this wet | all . | went after | and so |
| . they | it a | my playthings | |
| no ! | her . | said the | Thing two |
| know it | Oh , | they ran | in the |

the string
the hat
to have
cat went

and our
. then
not !
and some

said ,
in this
those things
it was

a dish
all kinds
! and
them away

sit there
way that
high as
my hat

her way
mother is
, and
, no

! down
Oh ,
you will
do you

is good
fun to
no !
as I

I could
was shut
Who was
gone with

down with
up our
say !
one and

me .
! said
. so
hat .

two .
this box
big red
with a

Thing one
know some
. now
wish ,

pink ,
look at

picked up , if to play , said

mother is is near . I as fast

you take gone away no way up up

! look her about look at this is

them run two . the fish and look

fun in a sad I did . and

down my hat ! Oh , away .

cup on know ! ! said ! Make

the cat ship , Thing two me now

said , my net was back these things

wish to way ! it came all we

and he . you nothing at in the

cat ! sit ! not bad do I

big and with a

mother !
! fast
a house
all !

, wet
up !
tall ,
stand on

fun on
! said
hat you
know what

do you
in and
way home
them !

big bumps
said .
not bite
no !

two and
cat .
and the
the cat

I will
dear .
. look
. Oh

me !
her bed
the house
after my

is wet
my net
these two
cup and

with a
stop .
. with
it is

Oh dear
this !
you hear
, we

But that
and he
away !
look !

Yes .
down !
to us
! But

ship !
as a

. a
it !
I like
down the
do not
is fun
dear !
fun at
! no
away .
and the
! have
that cat
way at
my net
a game
, and
. Oh
hat .
ball !
her gown
ship ,
said the
But you
look !
two hands
up with
big thumps
you shook
these things
as I
mother will
to play
all .
have to
. But
not like
the gown
cat in
me down
know some
! we
let you
should we
with a
cup ,
the hall
and the
, no
back in
in the
rake .
this ?
no .

this is
should not
a good
fun ?
it is
, did
have no
ship and
my net
hat .
! and
me down
no !
down !
let down
cat .
! said
the cat
big mess
! I
know what
look at
all !
and I
. .
away !
! look
you bent
back in
up the
and then
as you
these books
in a
not one
cup and
hit !
I did
But your
. look
said the
is that
mother asked
do was
the top
top of
, said
rake ,
with the
ball .
to say
. .
that they
something went

in the ! and all ! ! then

ball . ran up to stop a game

my hat and I hat . , we

! and is not did not rake !

kite bump this house you . she will

top with look at that is down .

. and up two fun But and we

your mother me ! should not sunny .

cat in with a as I no .

said the the fish have no I can

. then it to But I do you

something to ! too go !

. I not wish the cat any fun

mother will away with , said

away . | the sun | go away | . they

something new | should not | do ?

. we | and the | , as | hold up

the things | in the | she do | hat to

kite we | cat . | ball . | up the

Thump ! | have fun | But that | hook .

! I | ! sit | with the | I saw

got up | it . | mother came

bump ! | ran down | a shame | said the

is so | did nothing | to play | down ,

. . | ! look | ! I | fun that

look . | not all | your mother | , with

that I | you do | this , | as he

no ! | me now | all . | and Sally

. take
, Oh
have no
! and

bump made
. now
and a
is on

fun ,
in on
to fly
do !

all the
he should
! on
with my

should not
that !
so ,
did you

I know
too .
it ?
as fast

. .
she say
cat in
! then

! put
mother is
your mother
games we

you do
not .
and she
hook .

look at
a PLOP
something to

ran to
Thump !
the cat
always pick

up the
, and
go away
said the

ball !
down with
But our
this house

hat ,
the box
hold you

and I , little not like ! no

something ! said the it up you fall

this big all . jump ! cat .

ran about he picked hook . the things

on top near ! to you with a

! Oh hold up should we she will

! you bump ! your mother . they

did not go out that is mother is

and a . it . But hat !

we can shut with down ! so deep

too wet head ! in the , and

fun . ! and have Lots do not

us two I said But that a little

is out the cat

dots that
things had
hold a
and with
will hold
us jump
cat in
to sit
then we
she say
too cold
head of
game that
on her
your mother
do to
said the
the ball
! they
have no
a shame
! tell
bump From
you have
should we
with Sally
, and
. he
we shook
red .
hat .
he should
, cold
is no
. Oh
. now
I bet
. he
go !
! But
and then
the pot
in the
jumps and
that ?
shut up
But we
did not
not like
mother is
so so
ran out
all I
! with

will show
should not
your mother
us ?
tell her
do !
I do
to have
bump !
on the
with my
you another
then he
the cat
in the
that cold
game fun
red wood
! Make
, fast
fox ,
But our
and the
cat in
have fun
not like
had something
a fox
hold up
said the
, no
rid of
is no
we two
! Oh
too wet
. you
! said
see this
. But
he should
so we
! Thump
saw all
the things
things bump
she said
hat .
. they
all that
did !
the fish
and ,
. you

not be
white and
the fan
that cat
your mother
! and
cat .
I know
fish in
and then
then !
will pick
so tall
all if
he fell
! they
did not
on this
said the
to shake
tell her
, Think
the fish
bent our
red fan
should not
! I
can not
us fast
. Why
. then
and too
hold up
the cat
made us
. I
a hook
hat !
game .
bump their
you did
had them
do you
have no
. that
saw those
with fear
we did
things should
see something
is not
in this
! Oh
, I

so do
have come
on one
. then

, said
the strings
and I
I can

. Oh
do if
and the
hold the

cat in
kites in
he ran
! But

bump !
we could
should not
us ,

not go
Why ,
all my
tell that

saw mother's
things are
! not

to play
fly kites
! now
game ,

fish .
, the
did not
that went

can ,
. I
then he
said ,

shine .
with a
the pot
like it

in the
will she
a shame
the hat

. then
you will
is funny
your mother

had to
hat came
wet to