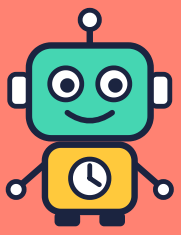
PRINT-AND-PLAY CARD GAMES

Data Detective Deck

Three quick card games and a class investigation. For 2 to 4 players, or the whole class.



You need

The 27 cards (9 Case cards, 9 Trick cards and 9 Chance cards), the chance line mat, the investigation sheet and a pencil. Every card has its answer printed upside down at the bottom.

Game 1: Quick draw

1. Shuffle all 27 cards and put them face down.
2. Take turns to draw a card and read it out loud. Cover the answer with your thumb!
3. Give your answer, then turn the card around to check.
4. Right? Keep the card. Wrong? It goes to the bottom of the pile. The most cards wins.

Game 2: The chance line

Deal out the 9 Chance cards. Take turns to place a card on the chance line mat, from impossible to certain. The other players can agree or challenge. Check with the answers at the end.

Game 3: Trick or fair?

One player holds up a Trick card and reads it out. Everyone else calls "trick" or "fair". If it is a trick, name it: a chopped scale, an unfair sample or a loaded question.

The three tricks

Chopped scale: the scale does not start at 0, so a small gap looks huge. Unfair sample: too few people were asked, or only one kind of people. Loaded question: the question pushes you towards an answer.

Class investigation

1. Pick a Case card that needs data, or write a question of your own.
2. Write your prediction on the investigation sheet before you collect anything.
3. Ask your classmates and tally every answer.
4. Draw the bar graph, then write down what you found. Was your prediction right?

Print on A4 at 100% and cut along the dashed lines.

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

What is the most popular fruit in our class?

Answer: needs data

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

What did I eat for breakfast today?

Answer: one quick answer

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

How do the kids in our class get to school?

Answer: needs data

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

What is 6 × 7?

Answer: one quick answer

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

How many pets do the families in our class have?

Answer: needs data

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

How many legs does a spider have?

Answer: one quick answer

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

Which day of the week gets the most rain this month?

Answer: needs data

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

How many days are in a week?

Answer: one quick answer

CASE CARD

NEEDS DATA, OR ONE QUICK ANSWER?

How many minutes do we each read at night?

Answer: needs data

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.

"9 out of 10 kids love Zap Juice!" They asked 10 kids at the Zap Juice party.

Answer: unfair sample

TRICK CARD

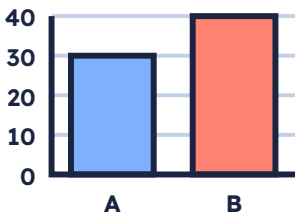
TRICK OR FAIR? NAME THE TRICK.

A survey asks: "Wouldn't you love a longer lunch break?"

Answer: loaded question

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.

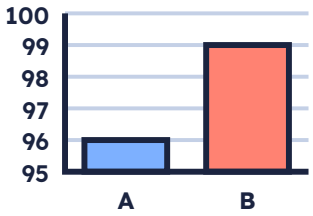


Ice-creams sold

Answer: fair

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.



Test scores out of 100

Answer: chopped scale

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.

A website asks only its own fans: "What is the best website?"

Answer: unfair sample

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.

"Which fruit do you like best?" Asked of 30 kids from every year level.

Answer: fair

TRICK CARD

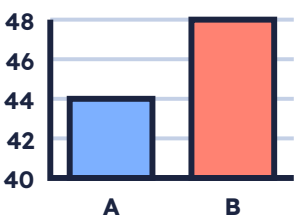
TRICK OR FAIR? NAME THE TRICK.

A survey asks: "Don't you agree that homework is boring?"

Answer: loaded question

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.



Jumps in one minute

Answer: chopped scale

TRICK CARD

TRICK OR FAIR? NAME THE TRICK.

"4 out of 5 dentists choose Sparkle." They asked 5 dentists.

Answer: unfair sample

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Roll a 7 on one ordinary dice

Answer: impossible

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Roll a number less than 7

Answer: certain

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Flip a coin and get heads

Answer: even chance (1 in 2)

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Roll a 6

Answer: unlikely (1 in 6)

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Roll 2 or more

Answer: likely (5 in 6)

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Pick a red marble from a bag of 3 red and 1 blue

Answer: likely (3 in 4)

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Roll an even number

Answer: even chance (3 in 6)

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

Pick the blue marble from a bag of 9 red and 1 blue

Answer: unlikely (1 in 10)

CHANCE CARD

IMPOSSIBLE, UNLIKELY, EVEN CHANCE, LIKELY OR CERTAIN?

The day after Monday is Tuesday

Answer: certain

DATA DETECTIVE DECK

The chance line

Place each Chance card next to the band where it belongs.

Impossible

It can never happen

Unlikely

It probably won't happen

Even chance

It happens about half the time

Likely

It probably will happen

Certain

It always happens

DATA DETECTIVE DECK

Our investigation

Detectives: _____

1. Our question

2. My prediction

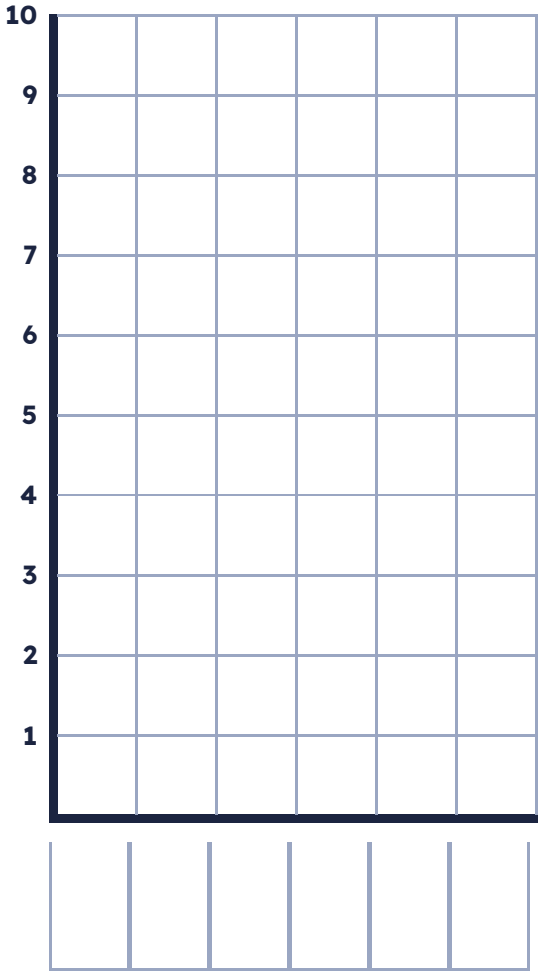
3. Tally the answers

Answer	Tally	Total

How many people did we ask?

Was our sample fair? Why?

4. Draw the bar graph



Write each answer under its bar. If you have more than 10, make each square worth 2.

5. What we found out

6. Was the prediction right? What would we ask next?

HOW TO USE

Thinking prompts

Keep these cards on your desk. Stuck on a problem? Pick a card and ask yourself its question.

DATA DETECTIVE · DATA

1

Ask a good question

ASK YOURSELF

What do I want to find out?

DATA DETECTIVE · SURVEY

2

Collect the clues

ASK YOURSELF

Did I ask enough people, the same way?

DATA DETECTIVE · CATEGORY

3

Sort it out

ASK YOURSELF

Which groups do these belong in?

DATA DETECTIVE · GRAPH

4

Picture the data

ASK YOURSELF

What picture shows this best?

DATA DETECTIVE · SCALE

5

Read the graph

ASK YOURSELF

What do the title, labels and scale tell me?

DATA DETECTIVE · AVERAGE

6

Find what's typical

ASK YOURSELF

Which one number sums this up?

DATA DETECTIVE · MISLEADING

7

Don't be fooled

ASK YOURSELF

Is this graph playing a trick?

DATA DETECTIVE · PROBABILITY

8

What's the chance?

ASK YOURSELF

How likely is it?